Growth Lab

Women at Work: A Systematic Diagnostic of Female Saudi Employment Gains in Saudi Arabia

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Growth Lab Working Paper Series
No. 253

August 2025

GROWTH LAB
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Draft for Discussion

Original Paper Draft: September 2023

This paper may be referenced as follows: Kaddah, F. (2025). “Women at Work: A Systematic Diagnostic of Female Saudi Employment Gains in Saudi Arabia.” Growth Lab Working Paper, John F. Kennedy School of Government, Harvard University.

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Executive Summary

Saudi Arabia has witnessed a paradox where high demand for labor did not translate into high labor force participation for Saudi women. Despite higher educational attainment than their male counterparts, Saudi women faced suboptimal labor market outcomes, including lower participation rates, higher unemployment, and concentration in lower-paying sectors. This paper aims to explore the historic employment gains made by female Saudis amidst weak economic performance following the 2014 oil price shock and the 2020 global pandemic. The paper divides the employment dynamics of Saudi women into two phases: during the oil boom (2003-2015) and post oil price shock (2016-2022). The former phase saw limited opportunities for women despite a booming economy, while the latter witnessed significant strides in female employment even amidst economic stagnation, which challenges traditional assumptions associated with oil-rich economies. This phenomenon drives this paper's growth question: *"How did female Saudis make historic employment gains amidst weak economic performance following the 2014 oil price shock and 2020 global pandemic?*

The paper presents some stylized facts of Saudi female employment gains as a means to systematically evaluate potential drivers of female employment that are consistent with these dynamics. Employment gains among Saudi women were primarily driven by an influx of new entrants to the labor market. Historically, Saudi women were concentrated in sectors like education and health. However, from 2016 to 2022, Saudi women employment diversified into areas like retail, construction, manufacturing, and food services. Surprisingly, while women with university degrees faced challenges in securing employment, those with high school or lower education saw faster integration into the labor market. This shift changed the composition of the female labor market, with a rising number of non-university educated women participating. However, Despite the employment gains, the gender wage gap in Saudi Arabia has widened. Factors contributing to this include the influx of low-skilled women into the labor force, many clustering around the de facto minimum wage. The wage differential persists even when controlling skills, economic activity, geographical location, and experience, suggesting other underlying factors at play.

The paper provides a review of the policy landscape that may have contributed to the gains made by females in the Saudi labor market. It examines a range of policies, including pro-women legal reforms, pro-women programs, and Saudization reforms, that have been implemented during the period of interest (2016-2022). These drivers are analyzed to assess their potential impact on female employment patterns, recognizing that identifying key drivers offers valuable insights into how the government can sustain and accelerate female employment gains. The paper utilizes a toolbox of empirical strategies to analyze the ability of potential drivers to explain the patterns in women's employment across time and dimensions. Two distinct tracks of policy reforms took place during the period of interest (2016-2022): the first one is pro-women legal and programmatic reforms and the second is nationalization policies that aimed at increasing Saudi employment and reducing reliance on expatriate workers.

I conclude the key drivers of Saudi female employment gains are:

1. Removal of legal and social barriers to the female labor force, from removing gendered workspace requirements to allowing women to drive, which contributed to create new access to employment, as well as to expand the set of firms and economic sectors that hired women.
2. Wage subsidies, especially during the initial phase of the COVID-19 pandemic in 2020, played a significant role in drawing newly entrant females into employment.
3. Increase in the Nitaqat *de facto* minimum wage for Saudi workers in 2021 likely attracted more women, especially those with lower education, to the workforce. This, combined with rising oil revenues and government spending, contributed to the growth in Saudi women's employment in 2021 and 2022.

Secondary drivers, such as the Nitaqat quota compliance and transportation subsidies for females, also appear to play roles, albeit to a lesser extent. The Nitaqat program, for instance, initially influenced female employment dynamics, especially the 2017 reforms, however, its impact weakened over time. Transportation subsidies, on the other hand, were particularly effective in 2019, aiding in the mobility of female workers.

The final section in the paper discusses the sustainability of these drivers. Pro-women legal reforms have significantly increased female employment at a near-zero economic cost. By creating new norms around female employment, these reforms have the potential for lasting effects, as shifts in social norms tend to occur gradually over time. On the other hand, the increase in the *de facto* Saudi minimum wage under Nitaqat may have unintended consequences. While it has the potential to drive more female into the labor market, a lack of commensurate gains in productivity may lead to higher labor costs for hiring Saudi women, potentially reducing the demand for their employment compared to expats. Subsidies, such as wage and transportation support, have helped boost female employment. Their fiscal cost may be justified if they serve as a temporary push to integrate women into the workforce, but if permanent subsidies are needed to retain female workers, they could pose long-term fiscal challenges. Additionally, the study highlights that higher education does not guarantee better job outcomes for Saudi women, emphasizing the need to align educational specialization with market demands.

Background

Motivation

As an oil economy, Saudi Arabia's labor market has historically experienced excess demand for labor. Paradoxically, this high demand for labor has not translated into high labor force participation and absorption of Saudi women. Despite possessing higher average levels of education than their male counterparts, women have worse labor market outcomes: Saudi women work outside the home less, earn less, enter lower-paying occupations, and face higher unemployment. Questions remain about the factors driving these outcomes for women, which may derive from a range of possible choices and barriers to training, entering, and advancing in the labor market.

These challenges indicate that women represent an untapped economic potential in the country. Recognizing this potential could enable the kingdom to drive the ambitious agenda of Vision 2030, not only in terms of reaching target female labor force participation rates but even more importantly in fostering private sector growth and diversification, ultimately leading to improved incomes for all.

Over the past two decades, Saudi Arabia's employment landscape for women has undergone significant transformations, which can be broadly categorized into two phases: pre- and post-oil price plunge. This paper focuses on the post-oil price decline in late 2014 (i.e. 2015 onward) and seeks to analyze the key factors driving changes in women's employment during this time. By identifying and examining these drivers, the paper aims to offer a comprehensive understanding of the evolving dynamics in Saudi women's labor force participation.

The motivation for this paper stems from the recognition that the various drivers behind these employment gains each carry distinct implications for the long-term sustainability of women's employment in Saudi Arabia. Understanding these factors is crucial for assessing the future trajectory of female labor force participation and its broader socioeconomic impacts.

Saudi Female Employment during Oil Boom (2003-2014)

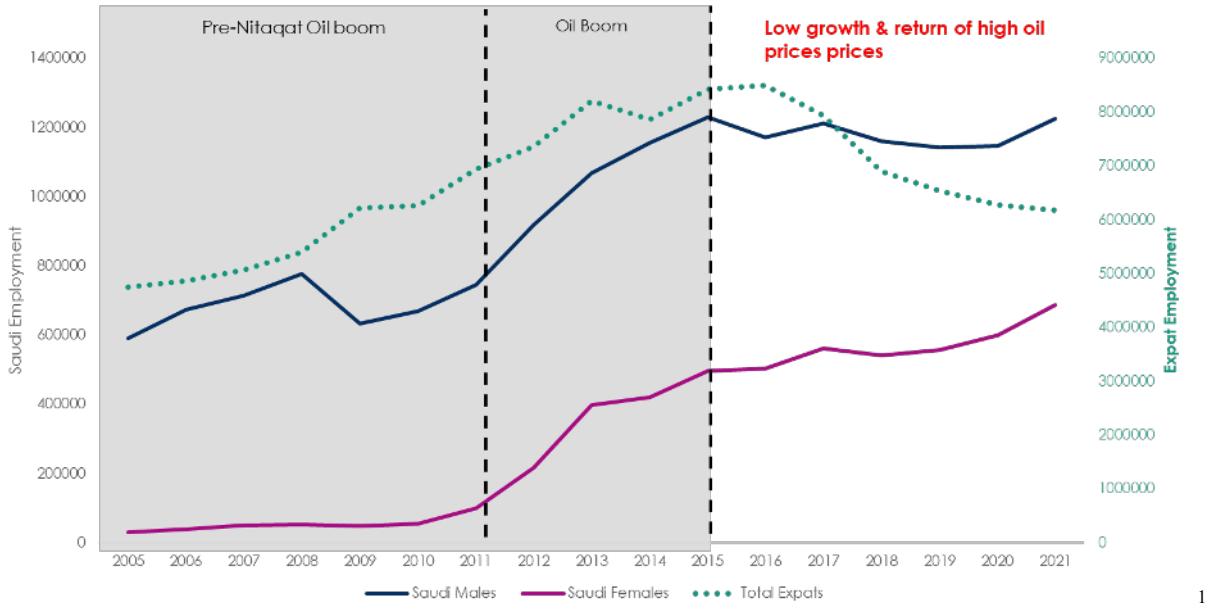
During the oil boom period from 2003 to 2014 the Saudi labor market experienced substantial employment growth, primarily driven by the surge in oil prices leading to large increases in government spending. However, despite the overall expansion in employment opportunities, female Saudis encountered significant challenges in achieving favorable labor market outcomes. The female-to-male ratio in the labor market was remarkably imbalanced in the 2000s, with an average ratio of one female employed for every 20 employed males.

The excess demand for labor and the entry of expatriates into the labor force shed light on the unique challenges faced by Saudi women in accessing employment opportunities during this period. One factor contributing to the limited employment opportunities for Saudi women is their historical concentration in feminized sectors such as education and healthcare, which accounted for more than 65% of their employment in 2016. Saudi women have been underrepresented in sectors that offer higher-wage and higher-skilled employment. This sectoral segregation has hindered the overall economic well-being of women in the labor market. The factors resulting in this sectoral concentration further hindered Saudi women's ability – and therefore Saudi incomes overall – to fully capitalize on the available labor market opportunities, even when economic conditions were favorable.

In 2011, a significant turning point occurred with the introduction of the Nitaqat policy. This policy aimed to boost the employment of Saudi nationals in the private sector by imposing Saudization quotas on firms. Peck (2017) finds that Nitaqat achieved its goal of increasing the Saudization rate by adding 63,000 Saudi workers; the program was not without its drawbacks, however, as the study found Nitaqat to cause 11,000 firms to exit as well as shrinking the overall private sector by an estimated 934,000 expat workers less than

without such a program in place. Following the implementation of Nitaqat, Saudi female employment witnessed notable gains, indicating a positive shift in labor market dynamics. These gains were achieved from a relatively low base, allowing for significant breakthroughs in women's employment patterns. Despite the improvements, female Saudi workers remained primarily concentrated in a few sectors, such as education and health.

Figure 1: Saudi and Expat Employment (2005-2021)



[1]

Source: SAMA Open Data (GOSI)

Female Employment Post Oil Price Shock (2015-2022)

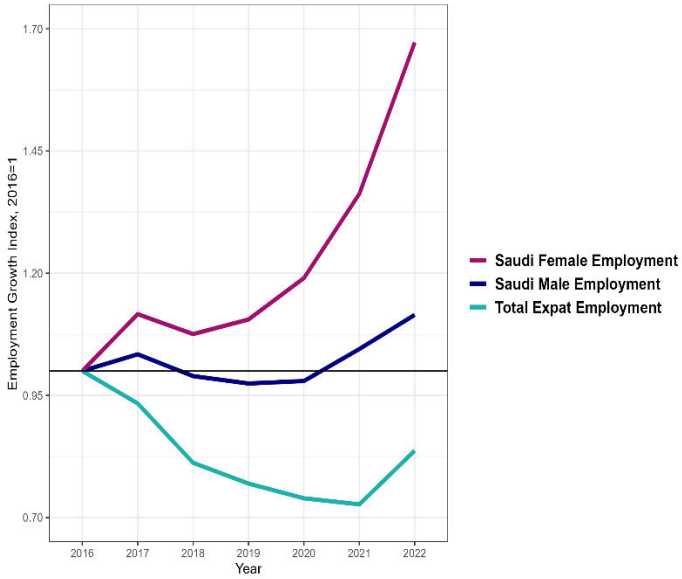
The period from 2015 to 2022 unfolded amidst challenging circumstances, including a slowing economy due to an oil price plunge and the disruptive impact of the COVID-19 pandemic. Despite these obstacles, female Saudis made notable progress in their labor market outcomes.

Plunging oil revenues in late 2014 meant the government was not able to maintain the rapid pace of spending growth, which contributed to a recession in 2017. Saudization policy proved less impactful to drive sustained increases in Saudi employment in low oil price period than during the initial phase. A second wave of Nitaqat introduced in 2017 led to a one-off increase in employment for both male and female Saudis before falling again in 2018. The introduction of new expat levies in 2018 accompanied significant declines in expat workers. After 2017, Saudi men's employment fell through 2020 before rebounding in 2021 that only returned to 2017 levels.

By contrast, female Saudis' employment outcomes displayed resilience over the period, maintaining positive growth each year since 2018. Remarkably, while Saudi men's employment declined and expat employment fell significantly, Saudi female employment made gains (Figure 2). In 2021 and 2022, female Saudis experienced another significant breakthrough in their employment outcomes, surpassing growth rates of both Saudi males and expats. By 2022, the ratio of females to males in employment had undergone a substantial transformation, shifting from 1 female for every 20 males during the oil boom years of the early 2000s to approximately 2 females for every 3 males.

[1] Latest publicly available data on the SAMA Open Data Portal is 2021. https://www.sama.gov.sa/en-US/EconomicReports/Pages/Summary.aspx

Figure 2: Saudi and Expat Employment Indexed Growth, 2016=1

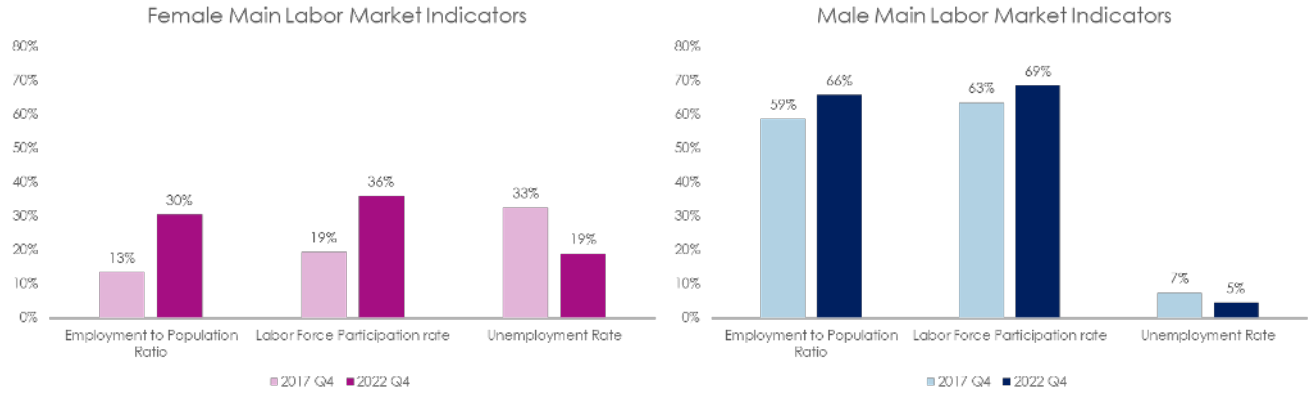


Source: SAMA Open Data (GOSI)

In summary, the employment dynamics for women in Saudi Arabia have undergone significant changes over the past decade. Despite initially lagging in a context of strong demand for labor, female Saudis have progressively improved their labor market outcomes especially in the past six years. Notably, they have continued to make impressive gains even during periods of low growth and declining oil prices and when Saudi men's employment stagnated, and expat workers fell sharply. When oil prices made gains in 2021-2022, Saudis and expats experienced rising employment while female Saudis experienced the fastest growth.

Following the 2014 oil price shock, Saudi women have experienced unprecedented gains in both employment and labor force participation, alongside a marked reduction in unemployment. The employment-to-population ratio for Saudi women has doubled, labor force participation has nearly doubled, and unemployment has fallen by 14 percentage points between 2017 and 2022 (Figure 3). These remarkable achievements are unique to Saudi women, as their male counterparts have shown comparatively modest progress during the same period, although men had much higher initial employment and participation rates (Figure 3). Notably, Saudi women have also been instrumental in driving private sector employment growth, becoming key contributors to the country's evolving labor market. Additionally, Saudi women played a pivotal role in driving private sector employment growth in the country. Over the period from 2016 to 2022, the rate of employment growth for women far surpassed that of men, standing at 78% as opposed to 21%. Notably, Saudi women made a substantial contribution to the private sector job market, filling approximately 1.5 times more jobs than men. Female Saudis added around 425,000 jobs, while men contributed approximately 278,000 jobs during the same period. Notably, more than 70% of the jobs added for women happened in 2021 and 2022.

Figure 3: Saudi Labor Market Indicator by Gender (2017 & 2022)



Source: GASTAT LFS

GROWTH QUESTION

The main scope of the study is driven by the following growth question:

How did female Saudis make historic employment gains amidst weak economic performance following the 2014 oil price shock and 2020 global pandemic

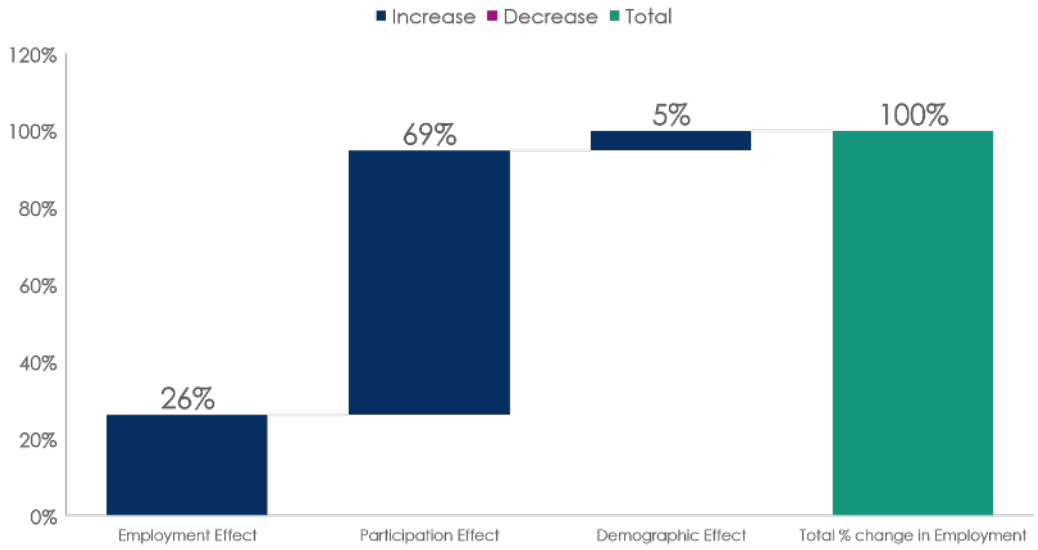
To address this question, we conduct a systematic analysis of the potential causes behind the increase in female employment, followed by an evaluation of how sustainable these drivers are and their broader policy implications. Before assessing the drivers of female employment, it is essential to first examine the key characteristics of the employment gains among Saudi women, as these will provide the foundation for evaluating the impact of the various contributing factors.

Section I: Four Stylized facts about female employment gains in Saudi Arabia (2016-2022)

Stylized Fact 1: Women entered the labor market for the first time at unprecedented rates and managed to find employment

Using a shift-share analysis, we find employment gains among Saudi women were primarily driven by increased participation in the labor market, rather than changes in population demographics or the availability of jobs. This analysis allows us to break down the factors contributing to employment growth into three main components: the demographic effect, the participation effect, and the employment effect (see formula in Annex Table 1). The demographic effect refers to employment growth resulting from an increase in the working-age population, while the participation effect reflects changes in women's preferences to join the labor market. The employment effect represents additional jobs secured by women who were already part of the labor force but previously unemployed. Our findings show that the participation effect plays the most significant role, accounting for 70% of the overall employment gains (Figure 4). This means that more women joining the workforce has been the primary driver of the positive trends in female employment. While some gains have also been made through the employment effect—women already in the labor market securing jobs—this explains only about a quarter of the total increase. In contrast, the demographic effect has had a minimal impact on Saudi women's employment gains.

Figure 4: Shift Share Decomposition of Saudi Female Employment by Participation, Demographic and Employment Effects (2017-2021)



Source: Author Calculations from GASTAT LFS

Stylized Fact 2: Fastest gains in labor market outcomes were made by non-university educated women while university educated females lagged

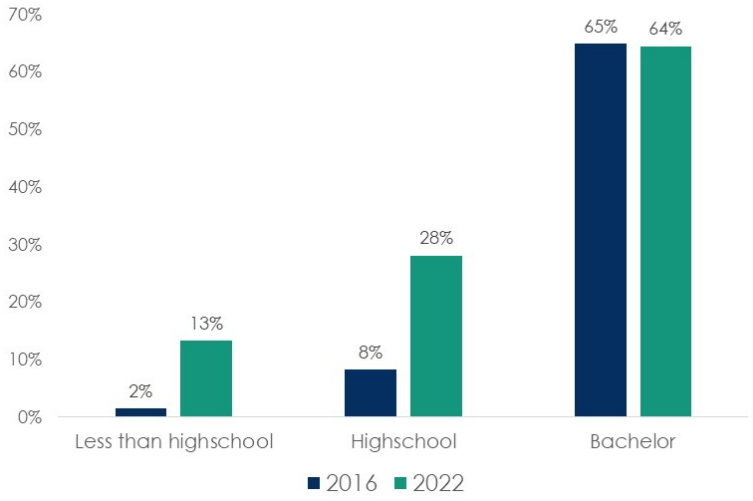
Labor market gains for Saudi women have been driven primarily by those with lower education levels, while university-educated women continue to face significant challenges in securing employment. Despite the rising number of female university graduates in Saudi Arabia, the labor market has struggled to absorb them, with employment gains being predominantly driven by women with high school education or less. In 2017, women with a university degree represented 70% of the female labor force, while those with high school education or less made up only 16%. However, by 2022, this dynamic shifted significantly—university graduates now account for 52% of the female workforce, and the share of non-university educated women has risen to 35% (Figure 5). This indicates a major surge in participation from non-university educated women, reshaping the overall composition of the labor market. While women with non-university education levels have integrated more rapidly and successfully into the workforce, university-educated women continue to face significant challenges. Employment outcomes for these non-university educated women have improved substantially, with their labor force participation rate exceeding 60% (Figure 5). By contrast, university-educated women have only seen slight improvements in their employment rates between 2017 and 2022 (Figure 6). Despite their high participation, university-educated women face the highest unemployment rate at 25%, compared to 10% for less than high school educated women (Figure 7).

The unemployment challenges faced by university-educated women suggest potential structural mismatches in the labor market. A deeper look at unemployment rates by education level reveals that this issue is unique to Saudi women, as Saudi men with higher education levels tend to have lower unemployment rates (Figure 5). This pattern suggests that the labor market may be struggling to absorb the growing number of female graduates, indicating a potential mismatch between their skills and labor market demands. Among university-educated women, younger females aged 25-35 face the highest unemployment

rate at 32%, highlighting the difficulties new female entrants out of university encounter in securing employment (Figure 9). This issue is less prevalent for their male counterparts.

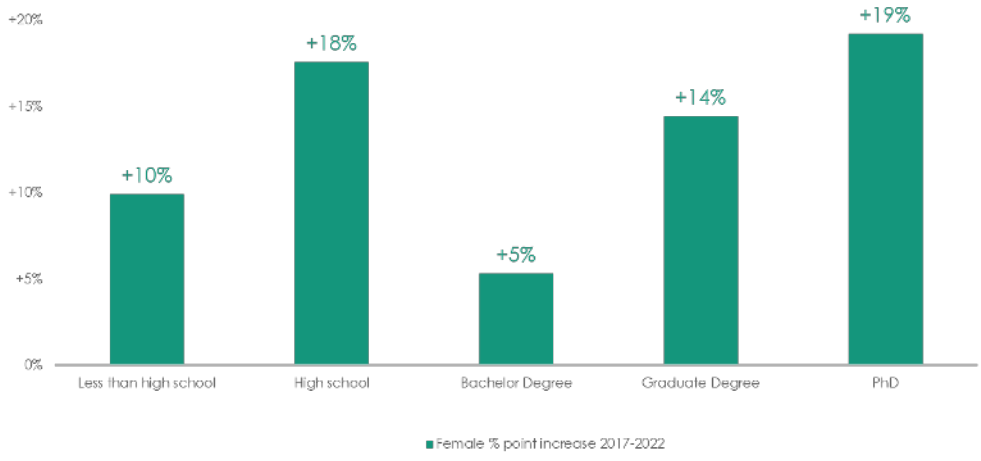
Increased educational attainment among women has not translated into better employment outcomes, particularly for those with university degrees. Although female educational attainment in Saudi Arabia has grown significantly since the early 2000s (Figure 32), it has not resulted in proportional employment gains for university-educated women. Historically, Saudi women have been more educated than their male counterparts, but this has not led to better labor market outcomes. Female graduates have traditionally concentrated in fields like education, health, and the arts—sectors that rely heavily on government spending and are less linked to broader economic demand. Merely expanding access to education has not automatically translated into better employment outcomes, indicating a deeper structural issue in the alignment between education and labor market demands.

Figure 5: Saudi Female Labor Force Participation by Education Level (2017 vs 2022)



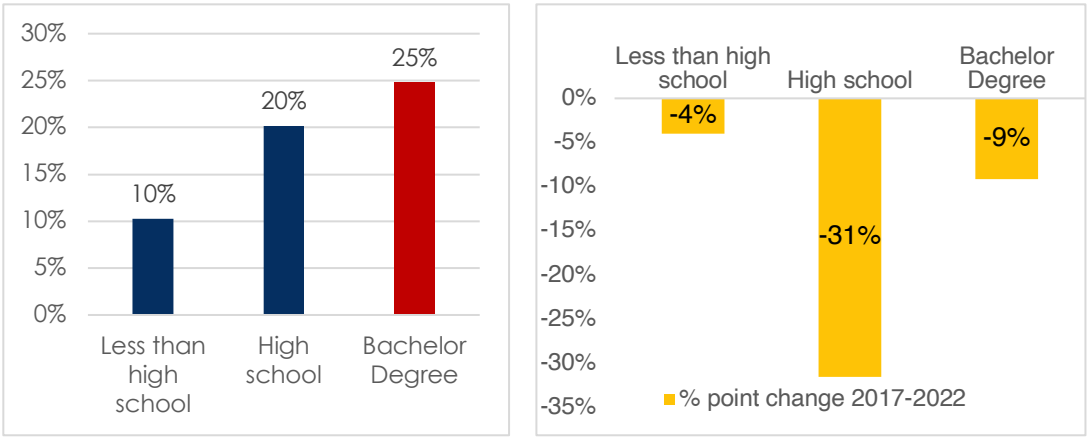
Source: GASTAT LFS

Figure 6: Percentage Point Change in Female Employment to Population Ratio (2017 vs 2022)



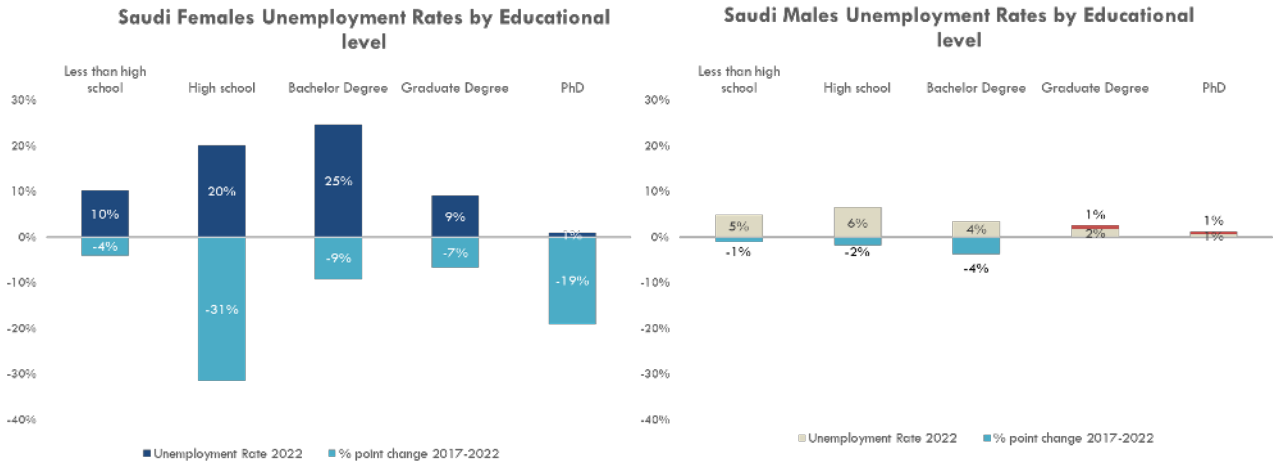
Source: GASTAT LFS

Figure 7: Saudi Female Unemployment by Education Level 2022 & Percentage Point Change (2017 vs 2022) in Saudi Females Unemployment Rates by Educational level



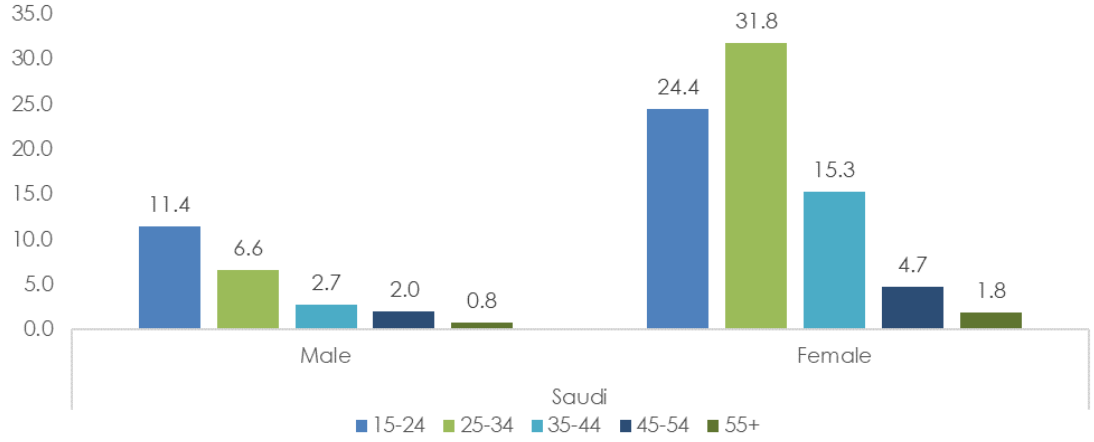
Source: GASTAT LFS

Figure 8: Unemployment by education level and by Gender (2017 vs 2022)



Source: GASTAT LFS

Figure 9: Saudi Unemployment by Age and Gender



Source: GASTAT LFS, Q2 2017 & 2022

Box 1: **What is driving employment for females with different educational backgrounds?**

As seen in Appendix 2 Figures 1, 2, & 3, employment gains for women with less than a high school degree and a high school degree have experienced a six-fold and a five-fold increase, respectively, far exceeding those of women with a bachelor's degree or above. Non-university educated women have experienced a break in trend. These gains have been driven by a positive shift in their labor market participation, indicating a strong pro-labor market attitude. On the other hand, employment gains for women with bachelor's degrees have primarily been driven by demography, via a substantial increase in the share of university-educated women entering the labor market between 2017 and 2021. This demographic effect, which accounts for about 70% of the total employment change, highlights the rising number of university-educated women in the labor force. However, compared to their non-university educated counterparts, the overall pace of employment gains for university-educated women have been relatively modest. Employment gains for non-university educated women have been driven by both participation and employment effects, indicating a shift in preferences and improved absorption in the labor market.

Stylized Fact 3: Female employment gains were driven by diversification into new economic sectors, away from traditional female fields such as education and health

Female employment gains were not driven by growth in traditionally female-dominated sectors. A shift-share analysis[2] reveals this by breaking down employment changes into three components: industry mix growth, which refers to job growth within sectors where women were already heavily concentrated (such as education and health); national growth, which reflects overall job creation across the economy; and feminization, which captures the increasing share of female workers across sectors. The analysis shows that had female employment relied only on growth in the sectors where women were traditionally concentrated (i.e. industry mix growth), female employment would have actually declined by 2022 (Figure 10), as these government-dependent sectors faced more challenging demand over the period. Additionally, national growth—overall job creation—did not significantly contribute to the rise in female employment. If women had remained in female-dominated sectors or followed national employment trends, their employment levels would have stagnated or even dropped (Figure 10).

The primary driver of female employment gains was diversification into new, male-dominated sectors. In 2016, over 65% of Saudi women were employed in sectors like education and health, but by 2022, this figure had fallen to around 37% (Figure 12). Instead of relying on growth in these traditional sectors, women increasingly entered male-dominated industries such as manufacturing, IT, finance, transportation, and food services. This shift is further supported by the Herfindahl-Hirschman Index (HHI), which indicates a significant move away from a concentration in just a few sectors to a more diversified female labor market (Figure 13). The increase in the share of females in these new sectors explains the dominant majority of female employment growth, as shown in Figure 10. Even during the economic recovery of 2021-2022, driven by rising oil prices, the traditional sectors where women had historically worked saw little growth (Figure 11). Without this diversification into new industries, women would have experienced job losses despite broader national economic recovery.

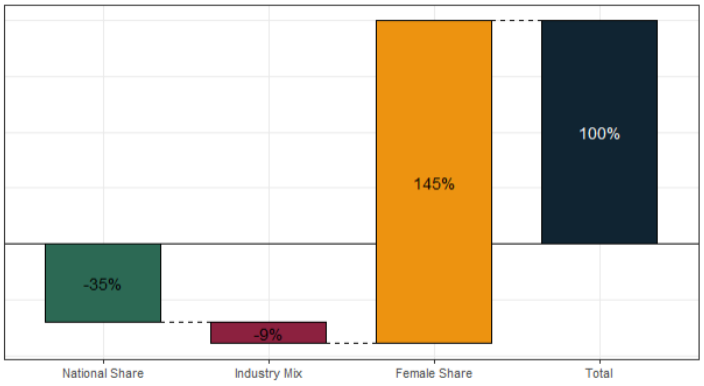
The expansion of female participation into new economic sectors was largely driven by non-university educated women. The feminization of previously male-dominated industries played a critical role in Saudi women's employment gains. As seen in Figure 14, women began occupying larger shares of

[2] Following the decomposition approach of Bartik (1991), we apply a shift-share analysis to female employment, separating changes into three components: industry mix growth (measuring employment growth within sectors traditionally concentrated with female workers, such as education and health), national growth (reflecting overall economy-wide job creation), and feminization (capturing increases in the share of female workers within sectors). This method allows us to assess whether female employment gains were driven by sectoral specialization, overall growth, or changes in gender composition within industries.

jobs in sectors such as manufacturing, IT, finance, transportation, and food services. This shift was particularly pronounced in both non-tradable sectors, like food services and transportation, and tradable sectors such as manufacturing and IT (Figure 15). Much of this expansion was driven by non-university educated women who found new employment opportunities in low-skill sectors. This diversification into new fields enabled women to achieve employment gains that would not have been possible had they remained in the limited traditional sectors of education and health.

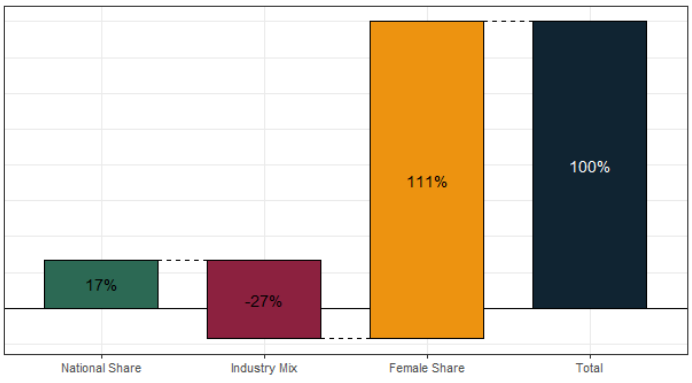
A shift toward more diverse degree specializations has helped align women's skills with emerging industries. Between 2013 and 2018, the share of women pursuing degrees in traditional fields like education and health decreased, while more women chose specializations in business, technology, engineering, and service-related fields (Figures 17 & 18). This diversification in academic specializations has likely played a role in improving employment prospects for university educated women in new sectors such as IT, finance, and business services, albeit from a low base. The diversification of specializations likely prevented highly educated women from lagging further in employment outcomes. Without this shift toward business, technology, and other emerging sectors, employment challenges for university graduates could have been more severe. Yet, as noted earlier, many university-educated women still face high unemployment rates, underscoring the ongoing need for stronger alignment between educational programs and labor market demands.

Figure 10: Decomposition of Female Employment Growth: National Share, Industry Mix, Female Share (2016-2022)



Source: MHRSD GOSI

Figure 11: Decomposition of Female Employment Growth: National Share, Industry Mix, Female Share (2020-2022)

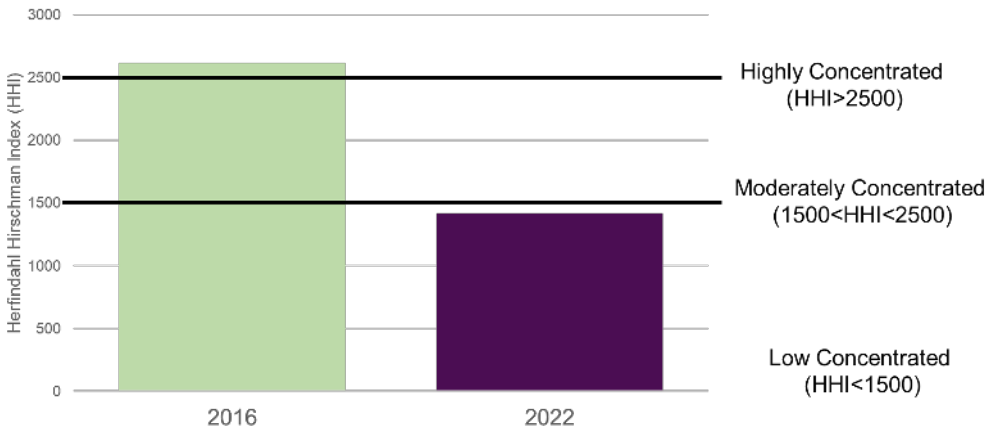


Source: MHRSD GOSI

Figure 12: Saudi Female Employment by Sector (2016 vs 2022)

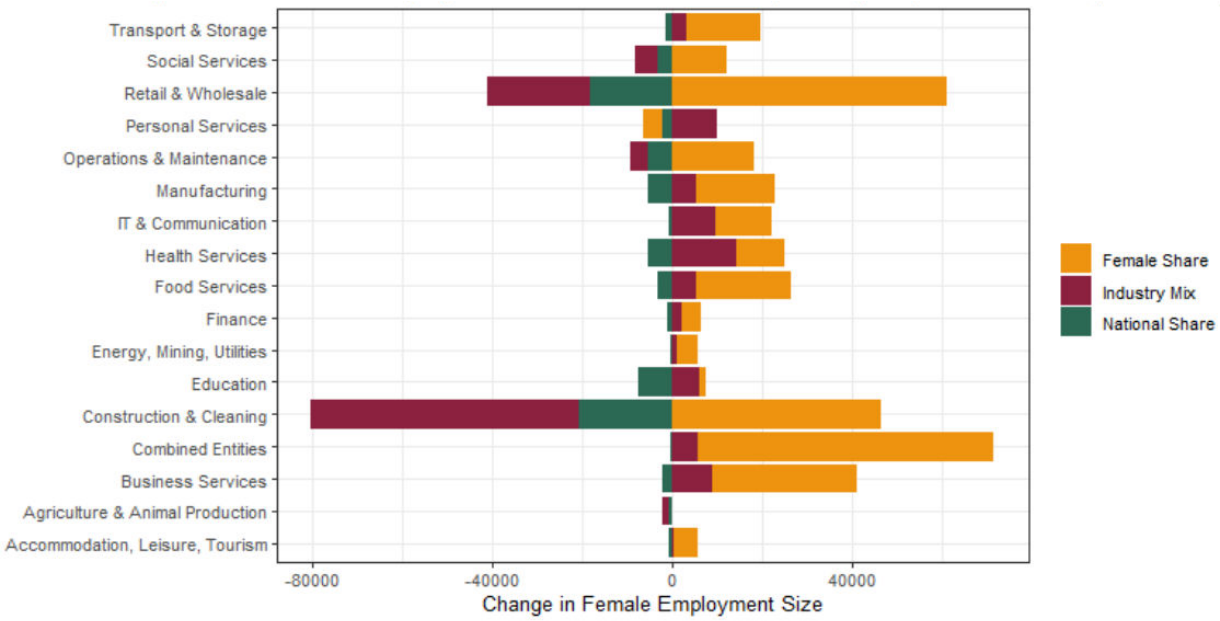
Source: GASTAT LFS

Figure 13: Concentration of Female Saudi Employment Composition in Sectors (Herfindahl–Hirschman Index) 2016 vs 2022



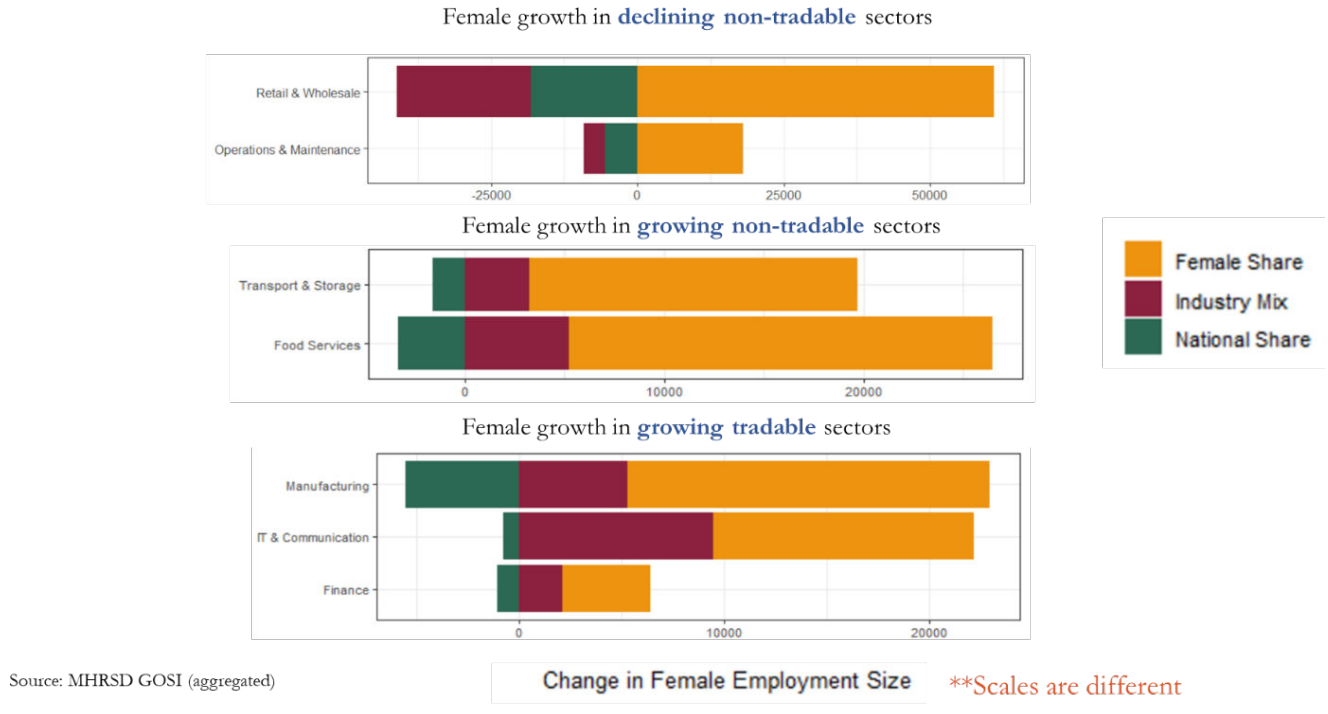
Source: Author own calculations from data from GASTAT LFS

Figure 14: Decomposition of Female Employment Change into National growth effect, Industry mix effect, and Female share effect



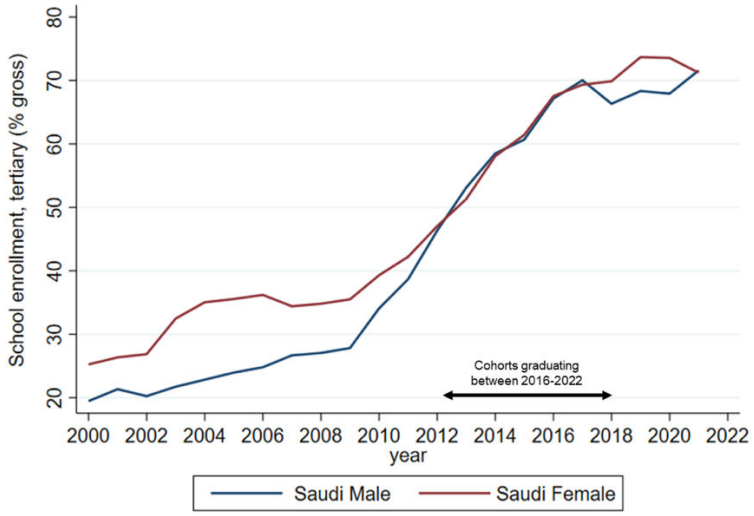
Source: MHRSD GOSI

Figure 15: Decomposition of Female Employment Change into National growth effect, Industry mix effect, and Female share effect



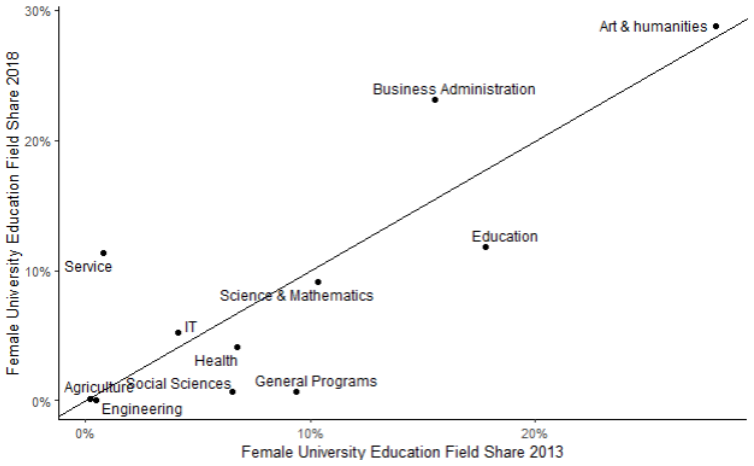
Source: MHRSD GOSI

Figure 16: Tertiary Enrollment by Gender (2000-2021)



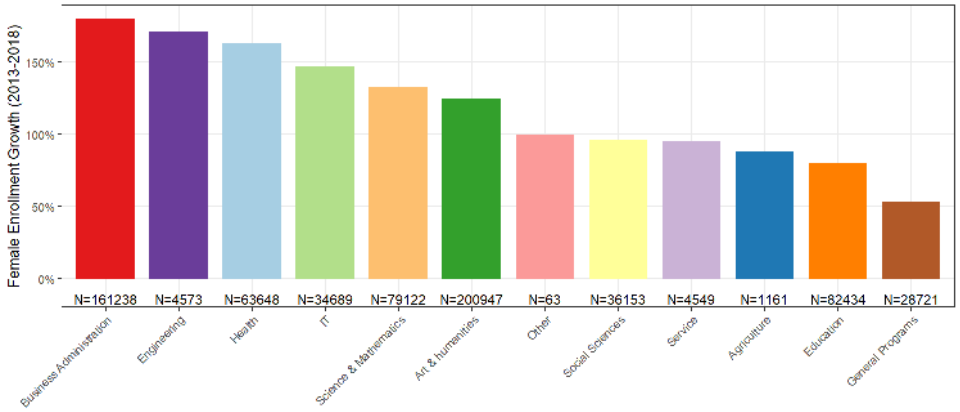
Source: World Bank WDI

Figure 17: Female Enrollment Share in University by Specializations: 2013 vs. 2018



Source: Saudi Open Data Portal

Figure 18: Female Enrollment Growth (2013-2018) by University Specialization



Source: Saudi Open Data Portal

Stylized Fact 4: Despite employment gains, the gender wage gap persists as partly explained by the sectoral gender segregation and the lack of experience of new entrants

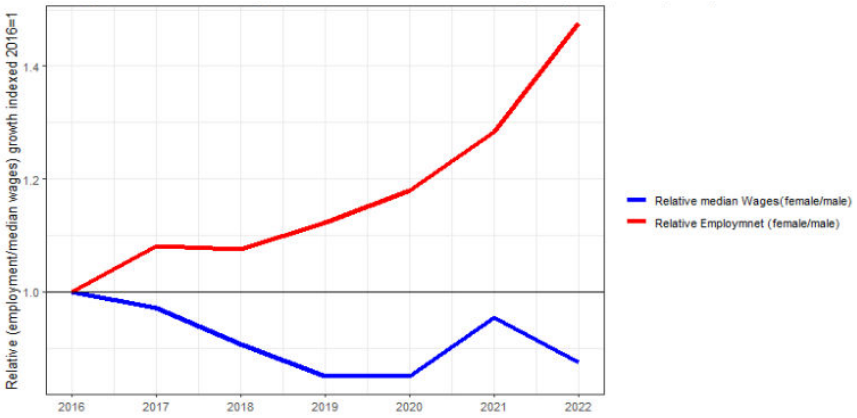
Despite significant employment gains, challenges persist in closing the gender pay gap in Saudi Arabia. A comparison of relative female-to-male employment reveals that while female employment has increased at a faster pace than male employment, the relative median wage for women has not kept up (Figure 19). Although wages have risen overall, the rate of wage growth for women has lagged behind that of men. The unadjusted gender wage gap has actually widened, increasing from 12% in 2016 to 23% in 2022 (See Table 2 in Appendix 1). Several factors may contribute to this wage gap, such as gender segregation, where women are concentrated in lower-paying sectors and occupations. Even after controlling for skills, industry, and other variables (such as location), the wage gap persists at 12% on average (See Specification 1 - Table 3 in Appendix 1). Moreover, the gap widened by 4% between 2016 and 2022 (See Specification 2 - Table 4 in Appendix 1), indicating that the wage differential is not solely due to skill levels or industry segregation.

The high proportion of new entrants among female workers may also contribute to the gender pay gap. Many women in the labor market are relatively inexperienced, which may limit their initial earnings and productivity. However, when analyzing new entrants to the labor market, we found that even among those in the same occupation, sector, and location, female new entrants earned 8% less than their male counterparts in 2016 (See Specification 3 - Table 3 in Appendix 1).

A significant proportion of Saudi women are clustered around the *de facto* minimum wage, further contributing to the persistence of the gender wage gap. Saudi women tend to be more constrained by the *de facto* Saudi minimum wage compared to men, despite being more educated. Approximately 60% of employed women are earning at or around the *de facto* minimum wage, a distribution that has remained largely unchanged since 2016 (Figure 20). In contrast, only around 30% of employed men fall into this wage category. This trend is observed across all economic sectors, where the share of women earning the *de facto* minimum wage is significantly higher than that of men (Figure 21). The increase in *de facto* minimum wage employment for women has outpaced that of men, helping to explain the relative decline in women's wages over time (Figure 22). Furthermore, 40% of the total growth in female employment comes from jobs at or around the *de facto* minimum wage, while the same figure for male employment has actually declined (Figure 23). For men, wage growth has been driven by increases in wages above the *de facto* minimum level, in contrast to women. This highlights a key factor behind the persistence of the gender wage gap, as women are more likely than men to be employed in lower-paying roles.

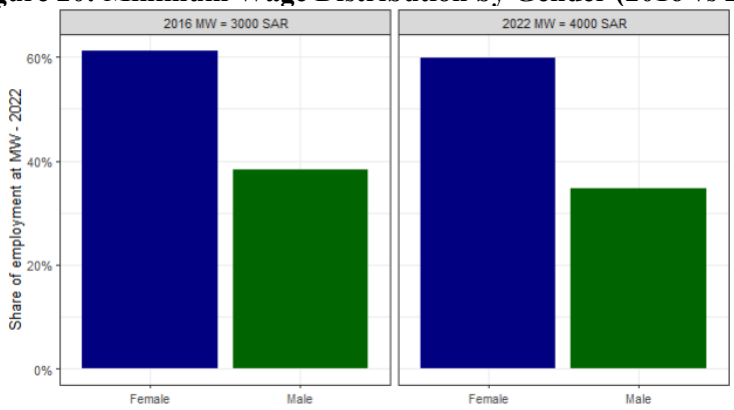
Addressing the gender pay gap in Saudi Arabia may require a long-term approach, despite the employment gains made by women across new sectors. The persistence and, in some cases, widening of the gender wage gap suggest that deeper structural issues need to be addressed for long-term change.

Figure 19: Change in Relative Employment (Female/Male) and Relative Median Wages (Female/Male), Index to 2016=1



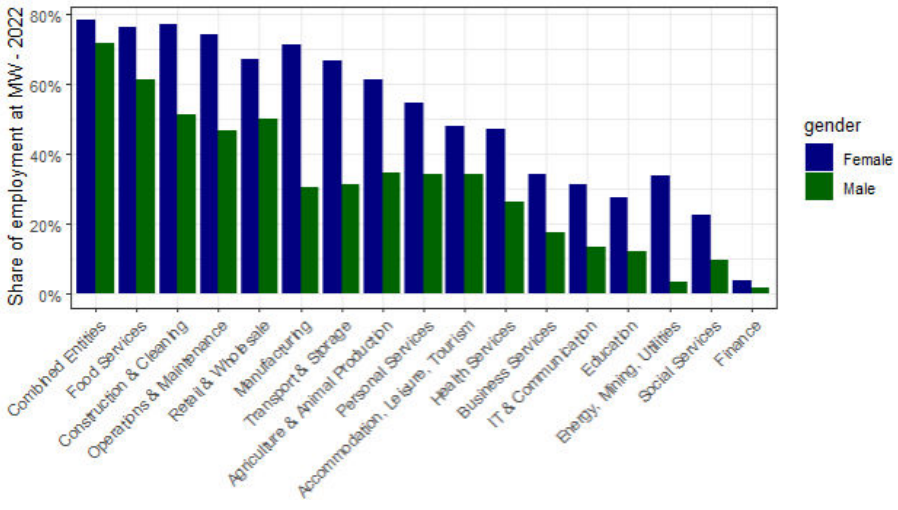
Source: MHRSD GOSI

Figure 20: Minimum Wage Distribution by Gender (2016 vs 2022)



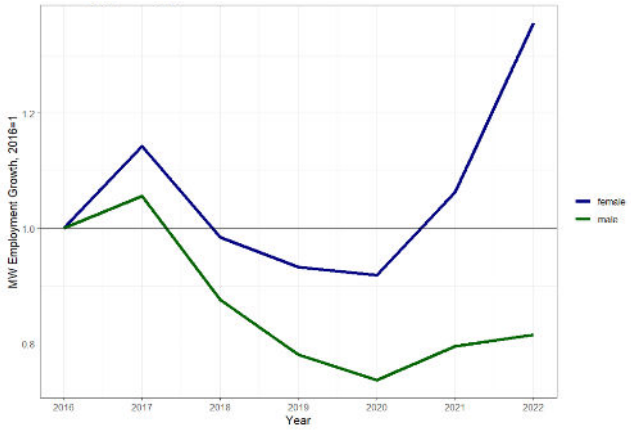
Source: MHRSD GOSI

Figure 21: Minimum Wage Distribution by Gender and Sector 2022



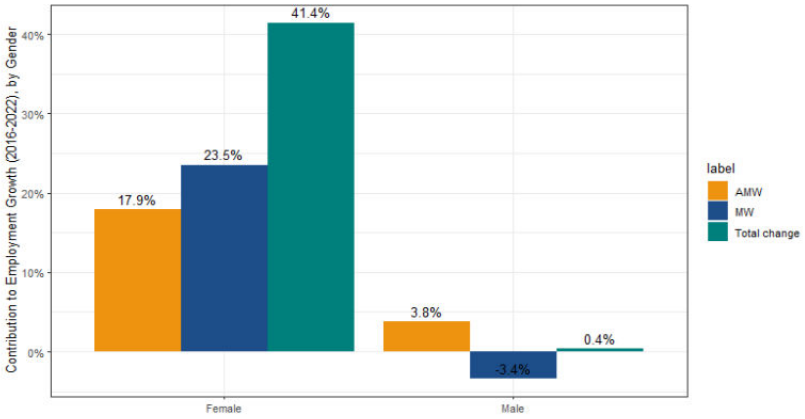
Source: MHRSD GOSI

Figure 22: Minimum Wage Employment Indexed Growth by Gender, 2016=1



Source: MHRSD GOSI

Figure 23: Minimum Wage (MW) and Above Minimum Wage (AMW) Contribution to Employment Growth by Gender (2016-2022)



Source: MHRSD GOSI

Section II: Drivers of Female Employment

This remarkable growth in female employment, even in a low-growth context, defied conventional expectations of labor patterns in an oil-driven economy. What accounts for the gains made by Saudi women? This paper now seeks to develop a framework to identify potential drivers of this growth and evaluate which of these align with the evidence presented. Understanding the predominant drivers behind Saudi women's employment gains is essential for policy, as each driver has distinct implications for how the government can sustain these achievements in the future. The analysis focuses on several key drivers deemed most relevant to female employment.

A Timeline of Female Employment and Potential Drivers

The period under examination (2015-2022) was marked by a series of policy, legal, and cultural changes. Figure 24 presents a timeline of some of the most significant reforms during this period, categorized into pro-women legal reforms, pro-women programs, and nationalization reforms (with dashed boxes indicating initiatives of lesser significance). These reforms played a critical role in shaping female labor market participation during this time.

Figure 24: Timeline of Policy Changes

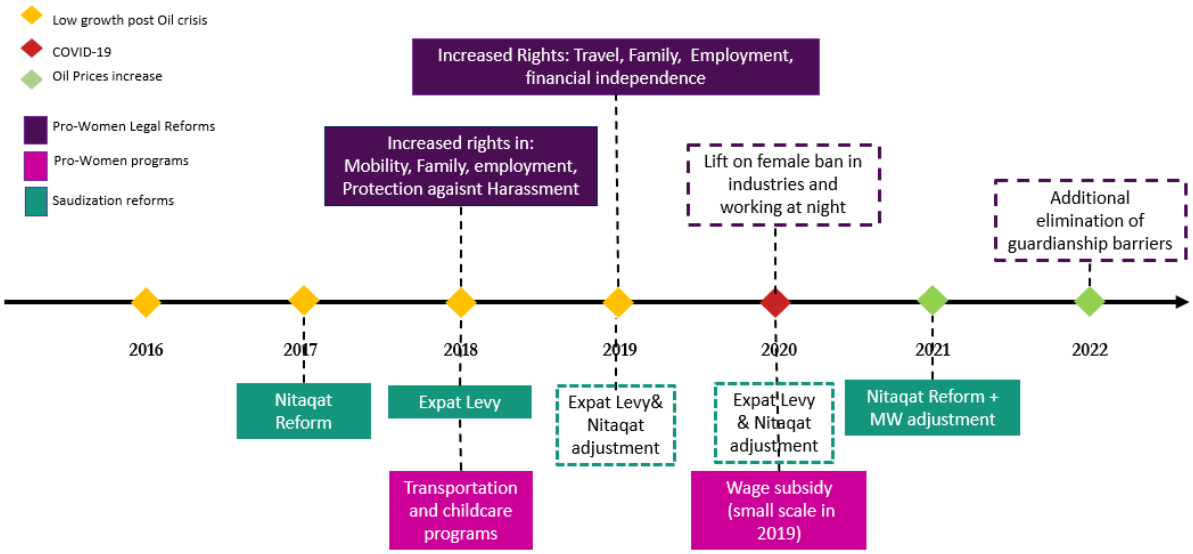
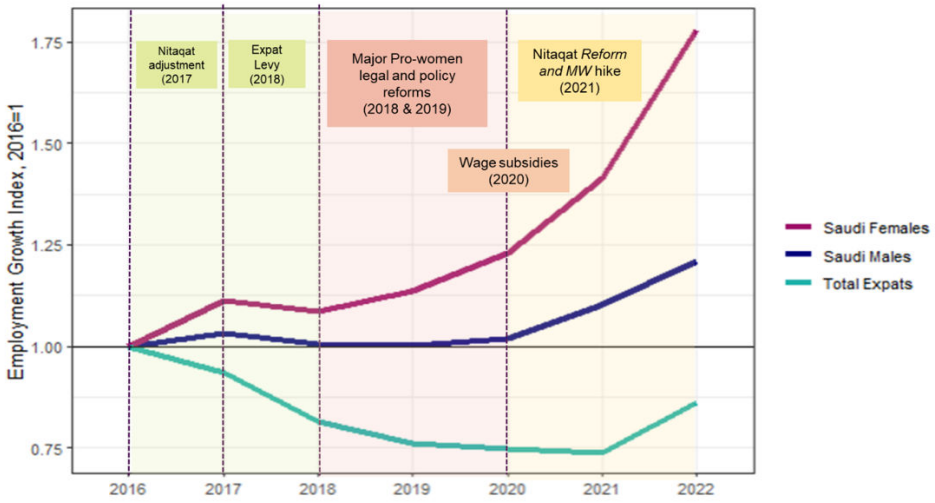


Figure 25: Employment Growth (2016-2022), Indexed, 2016=1



Source: GASTAT GOSI

2015-2018 Period: Oil Shock, Recession, and Nitaqat Reform. In the aftermath of the 2014 oil price decline and slow economic growth, including the 2017 recession. A new wave of Nitaqat reforms was introduced in 2017. Initially, Saudi employment increased in 2017, but this surge was short-lived. During this period, female employment grew at a faster rate compared to male employment, while expat employment experienced a significant drop.

2018-2020 Period: Expat Levy and Pro-women Reforms. From 2018 to 2020, several major changes shaped the labor market, including the introduction of the expat levy and a series of pro-women legal reforms. The expat levy led to a significant exodus of expatriate workers, which contributed to a small reduction in male Saudi employment, particularly those at the minimum wage, as these Saudi workers were no longer needed for Nitaqat compliance. However, despite the expat levy and Nitaqat reforms not being gender-specific, female employment showed positive gains while male employment largely stagnated.

During this period, several pro-women policy reforms were enacted, particularly in the latter half of 2018 and 2019. These reforms improved women's mobility, expanded their employment opportunities, and granted them greater autonomy in the workforce. Initiatives such as transportation subsidies and childcare services were also introduced to facilitate women's entry into the labor market. Notably, transportation subsidies were most impactful in 2019. The onset of the global COVID-19 pandemic in 2020 saw the government introduce wage subsidies, which had a significant impact on employment decisions.

2021-2022 Period: Oil Recovery, Minimum Wage Hike, Wage Subsidies. In 2021-2022, female Saudi employment accelerated alongside the return of oil price increases, growing government spending, and the return of new expat entry. Notably 2021 witnessed a hike in the *de facto* Saudi minimum wage under Nitaqat from SAR 3,000 to 4,000 attracting a substantial number of women into the workforce. Transportation and wage subsidies were also offered in the year 2021 (no data for 2022), but at smaller share compared to their peak influence in 2019 and 2020, respectively. By 2022, the economy was rebounding, following a surge in oil prices. Consequently, the workforce saw an uptick in expat employment for the first time in six years, which coincided with an increased pace of Saudi employment, particularly for females.

WHAT ARE THE MAIN DRIVERS OF SAUDI FEMALE EMPLOYMENT BETWEEN 2016-2022?

In the evaluation below, we find that there are multiple drivers contributing to the rise in women's employment in Saudi Arabia, with no single factor fully explaining these gains. However, the timeline makes it clear that different drivers were more impactful during different periods. Additionally, the evidence highlights that the gains in female employment were not uniform across all women, but varied significantly by education level, sector, and over time. Ultimately, some drivers have had more substantial effects than others. We employ a range of empirical strategies to assess the capacity of each potential driver to explain the observed trends in women's employment over time and across various dimensions. For each driver, we propose a hypothesis regarding its expected impact not only on Saudi women, but also on Saudi men and expatriate workers, and then compare this hypothesis to real-world data.

We find that most influential drivers of Saudi female employment gains are:

1. **Pro-women legal reforms and shifting cultural norms**
   Overall evidence suggests that the removal of social and legal barriers to women's participation, from removing gendered workspace requirements to allowing women to drive, contributed to create new access to employment, as well as to expand the set of firms and economic sectors that hired women. Removing legal barriers increased the effective supply of female workers that firms could hire. The removal of legal barriers and associated shift in social norms is one of the only drivers that can explain the differential gains made by Saudi women while Saudi men stagnated, and expats left in masse amidst weak economic performance in this period of low oil prices and fiscal consolidation.

2. **Preferential female wage subsidies for new entrants**
   Overall, there is evidence that wage subsidies have drawn new entrant females into employment (2020-2021) at a rate higher than men and thus is playing a partial but positive role in explaining female gains especially during the initial year of the pandemic in 2020 (wage subsidy data not available for 2022).

3. **Hike in the *de facto* Saudi Minimum Wage:**
   The 2021 increase in the de facto Saudi minimum wage helped pull non-university educated women into the labor market by raising their financial returns to work. This wage hike coincided with a period of rising oil revenues and fiscal expansion, creating more demand for Saudi female labor. Though there were concerns that higher wages might reduce demand for women clustered around the minimum wage, the simultaneous provision of wage subsidies helped sustain employment gains during this period. This calls into question the sustainability of these gains.

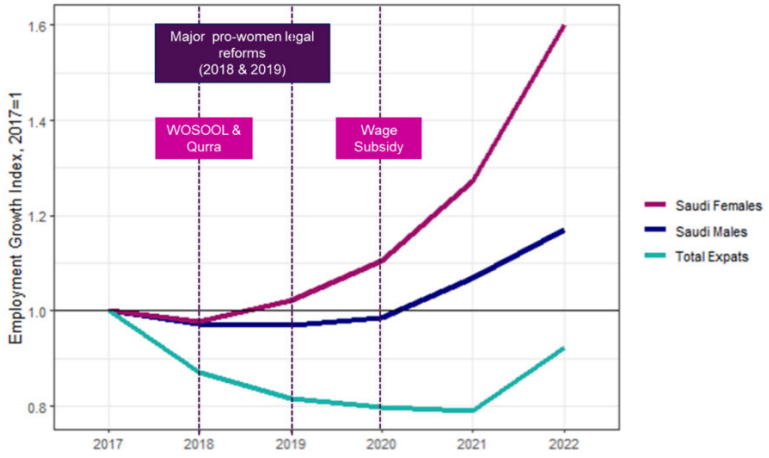
In this way, I argue that no one driver can explain the stylized facts of the largest gains by non-university educated women into new sectors in 2021-2022, but that the concurrent effect of these three drivers together explains the observed pattern of gains in Saudi women's employment. That is, the major pro-women legal reforms 2018 and 2019 laid the groundwork for a larger pool of new Saudi women entrants to seek employment in new sectors where evolving social norms and removal of legal barriers and gendered workplaces allowed for greater firm employment of women in new areas. Similarly, the hike in the *de facto* Saudi minimum wage alone can help explain the increased pool of non-university educated women entering the workforce but cannot alone explain the surge in Saudi women's employment in new sectors, which resulted from the combined effects of pro-women reforms and removal of legal barriers in the preceding years.

Secondary Drivers

1. **Nitaqat Quota Compliance:**
   Nitaqat has been effective in increasing female employment, particularly in sectors where compliance with quota requirements is strictly enforced. However, its influence has waned over time, as broader economic factors like oil revenues and government spending began to play a larger role. While the program led to initial gains, especially after the 2017 adjustment, its long-term impact has been limited, with mixed results across different industries**.**

2. **Transportation Subsidies:**
   The Wusool program provided critical transportation support for non-university educated women, significantly contributing to increased female workforce participation. The program's peak effectiveness was in 2019, when it facilitated the entry of a large proportion of new female workers. The program provides a temporary subsidy for women to find easier access to work further from their residences, though the time-defined nature of the benefits raises questions of sustainability. While it played an important role, the program's overall long-term impact remains uncertain as its provision does not correspond to the period with the most rapid gains as well as due to its temporal nature and a lack of comprehensive data.

Figure 26: Indexed Employment Growth for Saudi males, Saudi females, and expats. 2017=1



Source: GASTAT GOSI

Pro-women legal and programmatic reforms

This section studies the effect of pro-women policy reforms initiated in 2018 on female employment in Saudi Arabia. Major pro-women legal reforms and programs were introduced during 2018 and 2019, followed by the implementation of an employer wage subsidy on a large scale in 2020-2021. These policy

changes took place after the 2017 recession. During the 2018-2020 period, female employment surged, in contrast to small declines in male employment (Figure 26).

Pro-Women Legal Reform and Shift in Social Norms (Lifting Supply Side Barriers):

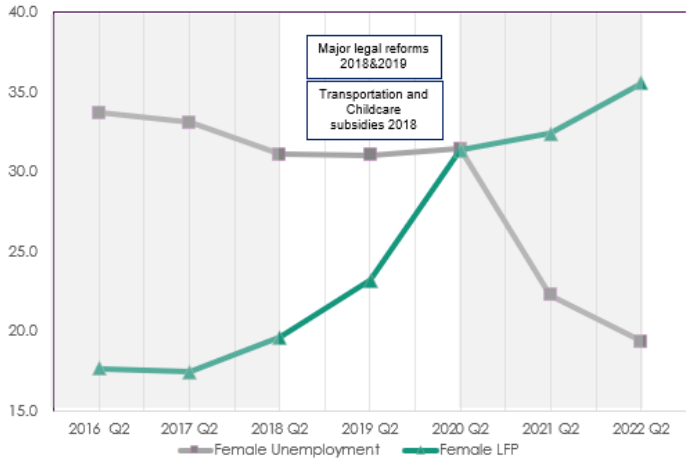
Overall evidence suggests that the removal of social and legal played an important role in enabling higher levels of female employment by making the female workforce more accessible. These changes coincided with a sharp rise in female workforce participation especially after 2018, primarily among non-university educated women.

Reforms expanded women's mobility and opened access to previously restricted sectors, particularly for women who were previously not part of the labor market. Key reforms, such as the 2018 lifting of the ban on women driving and the 2019 policy allowing women over the age of 21 to obtain passports and travel abroad without male guardianship, have been instrumental in enhancing women's mobility and personal freedom (World Bank, 2020; Embassy of KSA, 2019). Additional reforms targeted employment, lifting restrictions on women working in sectors such as mining, construction, and manufacturing, and removing bans on night work. Furthermore, protections against employment discrimination were strengthened, and the retirement age for women was equalized with that of men at 60 years (Ibid). Together with evolving social norms shaped by media and policy signaling, these reforms marked a significant shift in opportunities available to women.

New entrants drove much of the observed employment growth. Many women entering the workforce during this period were joining for the first time, contributing to what is described as the "participation effect." Labor force participation began rising sharply in 2018 without an accompanying increase in unemployment, suggesting that women were able to find jobs effectively (Figure 27).

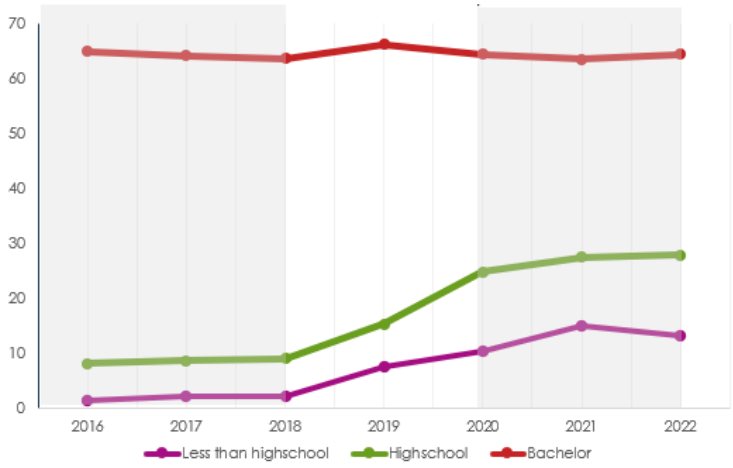
This increase in participation was especially pronounced among women with lower Between 2017 and 2021, women with high school or less-than-high-school education experienced the largest increases in participation (Figures 1 & 2 in Appendix 2). Participation among women with less than a high school education rose eightfold, and that for high school-educated women more than tripled (Figure 28). By contrast, participation among university-educated women remained relatively stable. Despite these substantial gains, the vast majority of high school and less-than-high school-educated women still remain outside the labor market, signaling substantial untapped potential for continued growth.

Figure 27: Saudi Female Labor Force Participation and Unemployment (2016-2022)



Source: GASTAT LFS

Figure 28: Saudi Female Labor Force Participation by education level (2016-2022)



Source: GASTAT LFS

Pro-Women Policies:

Targeted government programs have facilitated women's entry into the labor market, but their effects remain partial and uneven.

Transportation subsidies

Transportation subsidies (WOSOOL program) likely had a partial effect on female participation and employment, especially for the non-university educated. Estimates suggest that transportation subsidies were most effective in attracting females to the labor market in 2019. A more causal effect on employment could not be estimated due to lack of data on the program.

The WUSOOL program is part of a broader government incentive scheme in collaboration with the private sector aimed at increasing female participation in the workforce by providing them with safe and affordable transportation services to and from their workplaces. Launched in 2018, the program's operational model involves subsidizing rides for women with lower incomes and those who are recent entrants to the workforce (with less than three years of experience). This subsidy is facilitated through approved ride-sharing services with a maximum duration of two years[3]. Since its inception, WUSOOL has seen substantial growth. By the end of 2021, the program had over 100,000 beneficiaries with a total of 20 million trips (Uber, 2021).

WUSOOL subsidies have had varying levels of coverage for new female labor market entrants, with the greatest influence seen in 2019. Assuming that the majority of WUSOOL beneficiaries were new entrants to the workforce and used the service consistently for two years, the program's coverage would reach approximately 9% of new female workers in 2018, 26% in 2019, and 11%[4] in both 2020 and 2021 [5]. The program appeared most influential in 2019, when its coverage was at its highest. Due to the income threshold criteria, WUSOOL likely had the largest impact on women with lower levels of education. However, while the transportation subsidy helped facilitate female workforce participation, it provides only

[3] The subsidy covers 80% of the cost of women's commute to work and is capped at SAR 1,100 monthly. The program primarily targets women in the low to middle-income bracket, earning less than SAR 6,000 per month (SAR800 subsidy for those earning between SAR6,000-8,000)

[4] Highest possible estimation, assuming continuous use

[5] These estimates come from approximating the standing transportation beneficiaries every year and accounting for the expiry of the program for women who have been benefiting for 2 years. These numbers are compared with newly entrant female to GOSI (new IDs introduced from the preceding year)

a partial explanation for the overall employment gains, suggesting that other factors also played a significant role across the broader spectrum of female employment.

Childcare program (Qurrah)

Childcare subsidies may not be enough to significantly increase female workforce participation. The current Qurrah program does not align with revealed preferences among Saudi females and for non-working mothers. Cultural and societal factors likely play a significant role.

Childcare support has had limited take-up, reflecting cultural preferences and social norms. The Qurrah program, a government-led initiative which provides subsidies for working mothers in the private sector. An impact evaluation study by Cortes (2018) found that while the program has been well received, the take up was only about 15% of eligible mothers. Many preferred to rely on domestic workers or nannies despite higher costs, while others cited a desire to focus on childcare themselves as the main reason for not seeking employment.

Wage Subsidies

Overall, there is evidence that wage subsidies have drawn newly entrant females into employment (2020-2021) at a rate higher than men and thus play a partial but positive role in explaining female gains especially during the initial year of the pandemic in 2020 (wage subsidy data not available for 2022).

Wage subsidies directly boosted female employment by lowering firms' costs for hiring Saudis. These subsidies provide financial support for up to two years to employers who hire new Saudi workers, with a particular emphasis on women. Initially launched in 2019 for about 11,000 recipients, the program quickly expanded—reaching 147,000 beneficiaries in 2020 and 134,000 in 2021 (HRDF reports). Women consistently benefited at higher rates than men, receiving 5% more subsidies in 2020 and 60% more in 2021, underscoring the program's clear focus on supporting female workforce participation.

Wage subsidies had their greatest impact during the pandemic, temporarily supporting a large share of new female workforce entrants before their influence tapered as the economy recovered. In 2020, subsidized women represented up to 11% of the female workforce, compared to just 5% of men. The effect persisted but weakened in 2021, when 10% of women benefited from subsidies while the male share dropped to 3% (upper-bound estimates, as not all beneficiaries may have remained employed for the full two years of subsidy eligibility). Importantly, in 2020 wage subsidies covered more than 40% of new female entrants, but this fell to just 8% by 2021, underscoring the program's declining influence as economic recovery set in. Even so, subsidies played a critical role in stabilizing female employment during the early, uncertain stages of the pandemic.

Saudization Programs

Quota (Nitaqat) compliance

Evidence points towards the effectiveness of the Nitaqat program in increasing female employment in sectors subject to quota compliance, while its impact is comparatively less pronounced in other sectors. The program effect was briefly felt after the 2017 Nitaqat quota adjustment, however, over time, the program's influence gradually became less relevant. Later in 2021, the hike in the Nitaqat de facto Saudi minimum wage likely pulled new female entrants into the labor market. Rising oil revenues and new government spending may also have driven new demand for Saudi workers, particularly, as Nitaqat quotas became newly binding.

The Nitaqat program is a key component of nationalization policy aimed at promoting the employment of Saudi nationals (Saudization). The original introduction of Nitaqat in 2011 is associated with the first major increase in Saudi women's employment, as has been attributed to the program (Peck, 2017). This program introduced a nuanced system of quotas that varied according to the size of the firm, composition of Saudis and expats, and the industry in which it operates. The primary objective was to incentivize private firms to hire more Saudi employees, thereby reducing the reliance on expat labor. Examining the period post oil price shock in (2015-2022), we witness two major Nitaqat reforms, in 2017 and 2021. The first major version of Nitaqat was introduced in 2017, which increased the Saudization rate required by firms in different industries and introduced a parallel system where employers pay extra fees if the ratio of expats in a firm is greater than Saudis. Despite happening during low growth period, this reform was followed by a short-lived increase in Saudi female and male employment.

Nitaqat compliance introduces constraints on firms' capacity to hire expat workers, the vast majority of whom receive lower wages compared to their Saudi counterparts. When bound by the quota restrictions, every additional expat that a firm wants to hire must be met with the hiring of an additional Saudi; or conversely, firms shedding expat workers would no longer be bound by the quota and may choose to fire Saudis. In effect, employment trends among Saudis and expats should be positively correlated for firms bound by the quota, particularly for Saudis who are hired at the minimum wage. From 2016 to 2022, employment patterns between female Saudis and expats were negatively correlated, with a large decline in expat workers and major gains by female Saudis (Figure 29). It is not obvious how Nitaqat policy can explain these larger trends in employment between expats and Saudi women.

While Nitaqat policy cannot fully explain broad employment trends, a closer look at sectoral dynamics offers additional insight into how compliance has shaped employment patterns. In theory, Nitaqat compliance should lead to simultaneous increases or decreases in both expatriate and Saudi employment. Some sectors, such as business services, IT and communications, energy, and health, reflect this positive correlation, where Saudi women, men, and expatriates all gained employment, suggesting potential compliance with the quota system (Figure 30). However, this pattern is not consistent across all sectors.

The construction sector demonstrates how economic factors, alongside Nitaqat, influence employment trends. In construction, more than 2.5 million expatriates and 33,000 Saudi women lost jobs, likely due to declining demand for construction services as a result of reduced fiscal spending from lower oil revenues. The simultaneous job losses for Saudi women and expats suggest that Nitaqat quotas were a factor in firms' hiring decisions, as companies may have needed to hire Saudis to maintain expatriate employment. Additionally, the largest employment gains occurred in "combined entities" (firms with five or fewer employees), suggesting that some firms may have restructured to avoid strict Nitaqat regulations by intentionally reducing their size to bypass quotas (Figure 31).

In most sectors, however, a reduction in expat workers was accompanied by modest gains in Saudi female employment, challenging the idea that Nitaqat alone drove these changes. Sectors like food services, retail, and manufacturing saw significant reductions in expat workers—over 510,000 expats left these industries—while Saudi female employment grew by some 20,000 workers. This discrepancy indicates that factors beyond Nitaqat, such as broader economic conditions and other labor market reforms, were likely at play in driving these shifts in employment (Figure 31).

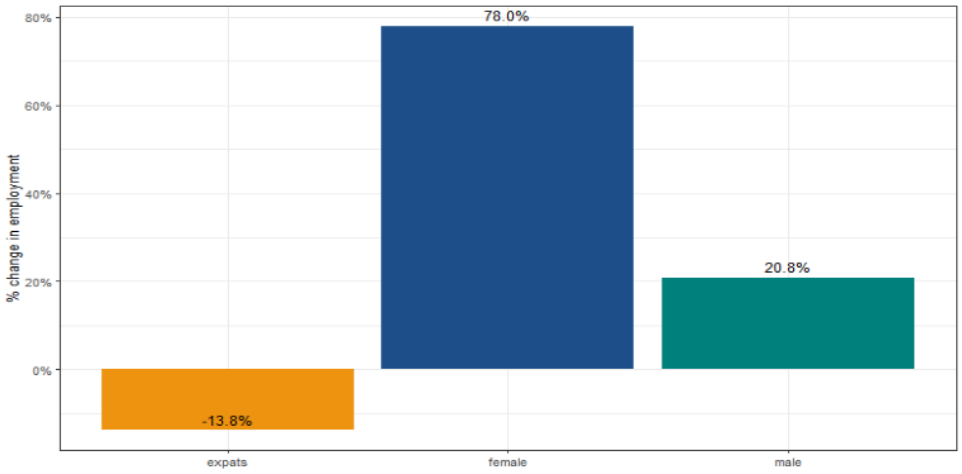
A closer look at employment levels at the Nitaqat *de facto* Saudi minimum wage during 2016–2019, however, reveals some short-term alignment with quota dynamics where quotas may have been binding for certain firms in certain sectors. Female employment at this minimum wage level rose in 2017 but then declined, ending only five percent below 2016 levels. By contrast, expat employment fell much more steeply. In addition, Saudi men's employment at the de facto minimum wage declined more

than Saudi women (Appendix Figure 4). This suggests that, at least in the immediate aftermath of the 2017 reform, female employment at the minimum wage moved in the same direction as expats and Saudi men at the same level, consistent with the possibility that Nitaqat quotas were binding for some firms. Yet the modest scale of decline for Saudi women highlights that quotas were only part of the story.

At the sectoral level, Saudi employment patterns at the *de facto* minimum wage were mixed. In expat-intensive sectors such as construction and manufacturing, expat employment fell alongside and Saudi women's minimum wage employment, while in sectors like accommodation, IT, and energy, expat jobs declined even as female employment at the *de facto* minimum wage rose, highlighting that quotas were binding in some sectors but not uniformly so (Appendix Figure 5). This further underscores the limits of a purely Nitaqat-based explanation that face momentary, sector-specific potential to describe Saudi women's employment decisions but offer little potential to describe the period of significant gains.

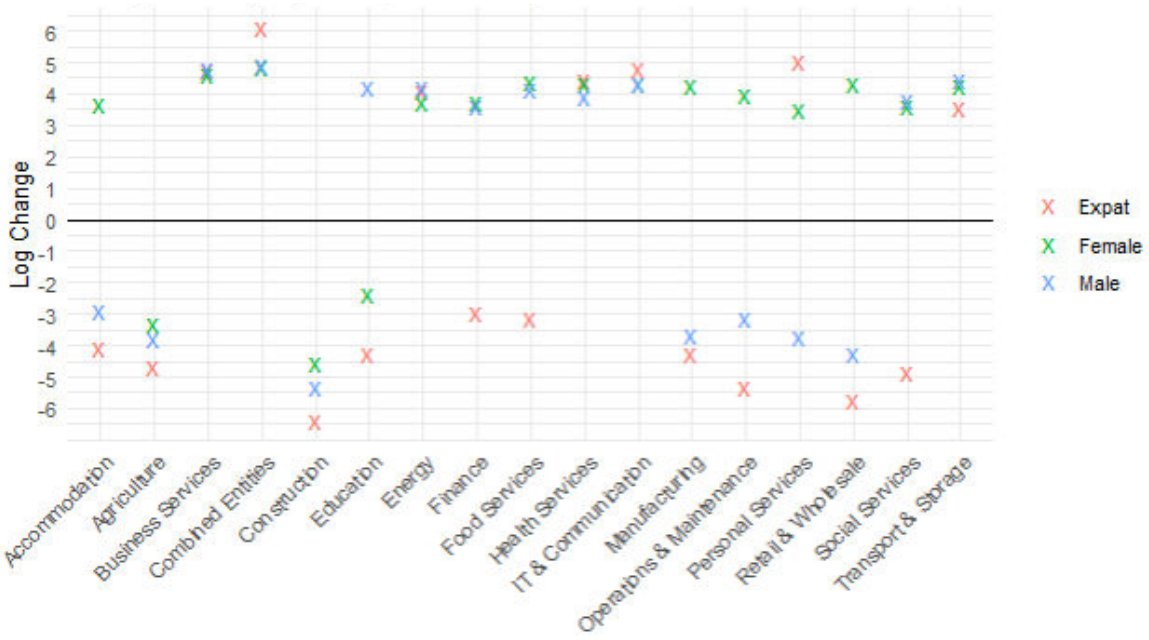
Nitaqat alone cannot explain the gender differences in employment patterns between Saudi men and women. One hypothesis may be that firms facing tighter Nitaqat restrictions in 2017 have access to a larger pool of untapped talent among Saudi women who offer higher rates of education among the unemployed. The data fail to find evidence for this hypothesis, as the greatest gains over the period were made by higher rates of participation and employment of non-university educated Saudi women. In addition, the fixed costs of integrating female workers in a firm remain significant in 2017 as gendered workplace requirements partially explain why firms found it harder to integrate the first female than any jump after that first female worker (Miller et al., 2022). This suggests that Nitaqat alone may not have been sufficient to drive the large increase in female employment. It was not until other pro-women reforms and policies were addressed that the large pool of Saudi females became readily accessible and made a leap in their employment levels.

Figure 29: Employment Growth (2016-2022)



Source: MHRSD GOSI

Figure 30: Saudi females, Saudi males, and Expat Employment change (2016-2022) by sector



Source: MHRSD GOSI

Figure 31: Change in Saudi Female and Expat Employment by Sector (2016-2022)

Sector	Expat Change	Female Change	Male Change	Sector Change
Combined Entities	1311151	71209	79261	1461621
Business Services	52612	38914	58528	150054
Food Services	-1292	23121	13083	34912
IT & Communication	62751	21381	21207	105339
Retail & Wholesale	-513978	19820	-17238	-511396
Health Services	25767	19749	8389	53905
Transport & Storage	3517	18122	29089	50728
Manufacturing	-17048	17443	-4858	-4463
Operations & Maintenance	-220864	8891	-1431	-213404
Finance	-874	5372	3839	8337
Energy	12135	5176	15650	32961
Accommodation	-12352	4881	-845	-8316
Social Services	-69199	3905	6232	-59062
Personal Services	114612	3273	-5589	112296
Education	-19453	-218	15868	-3803
Agriculture	-47796	-2126	-6306	-56228
Construction	-2504946	-33822	-210087	-2748855

Largest to smallest employment change for Saudi Females

Source: MHRSD GOSI

Nitaqat *De Facto* Minimum Wage Increase

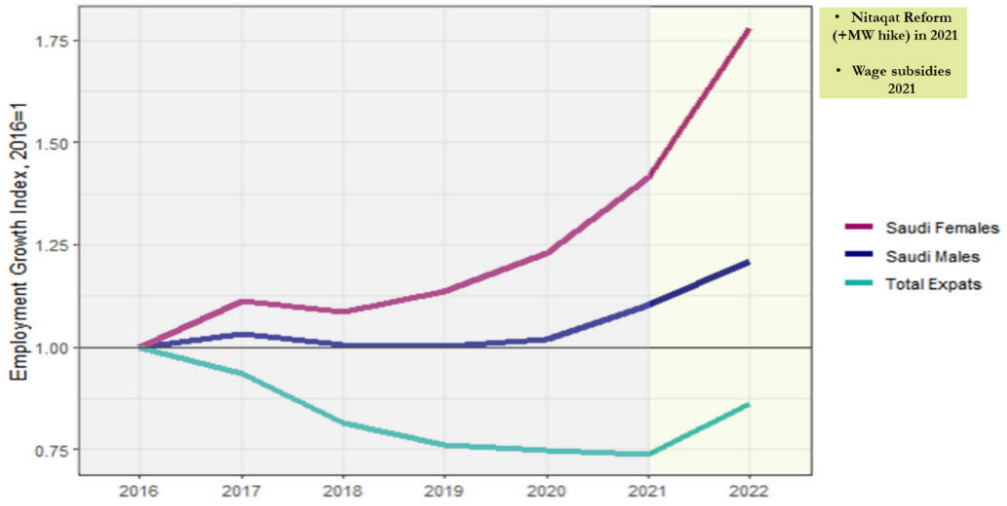
The increase in de facto Saudi minimum wage may have expanded the female labor pool by incentivizing lower educated Saudi women to enter the workforce. Rising oil revenues and new government spending may also have driven new demand for Saudi workers to create a combined effect of explaining Saudi women's employment gains in 2021 and 2022.

The 2021 increase in the *de facto* minimum wage, introduced alongside rising oil revenues and fiscal expansion, is associated with a sharp rise in Saudi employment, most notably among women. In 2021, the government increased the de facto Saudi minimum wage to count as a full Saudi under the Nitaqat program. Under this version of Nitaqat, Saudi employees earning between SAR 3000 and SAR 4000 were awarded half a point in the Nitaqat quota calculations, while those earning SAR 4000 and above received a full point, effectively raising the threshold of the program. Because many women were clustered around this wage level, while most men earned above it, the reform disproportionately affected women's employment. In coinciding with a moment of rising oil prices and fiscal expansion associated with increased labor demand, the heightened thresholds for Nitaqat compliance are associated with the increased hiring of Saudi women, even at the higher *de facto* minimum wage.

The *de facto* Saudi minimum wage hike had dual effects on the labor market: it increased the cost of hiring Saudi workers, but also made labor market participation more rewarding for new Saudi entrants. For women whose reservation wages were above SAR 3000, the reform opened the door to labor market participation. At the same time, wage subsidies—still in place in their third year—likely softened the cost burden for employers, ensuring demand for Saudi female workers did not fall. Together with a period of fiscal expansion, these dynamics resulted in dual gains: rising female participation alongside declining unemployment, illustrating how structural reforms and macroeconomic conditions intersected to drive women's employment growth in 2021–2022.

In short, additional factors, beyond nationalization policies, have influenced Saudi women's participation and employment. These drivers, which differ from those affecting Saudi men, have played a significant role in shaping the employment landscape for women in Saudi Arabia.

Figure 32: Employment Growth 2016-2022 (Base Year = 2016) for Saudi Females, Saudi Males and Expats



Saudization vs Feminization

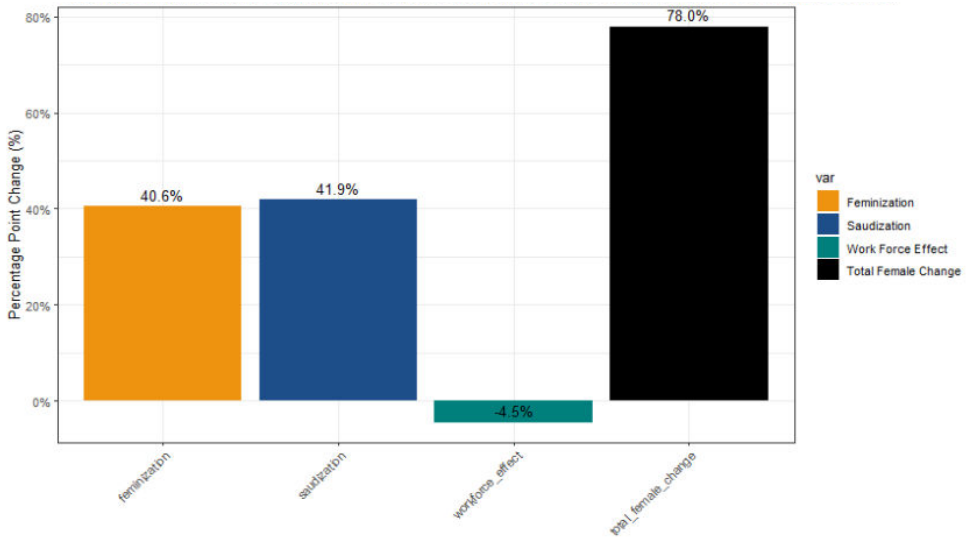
In Saudi Arabia, two distinct labor market policy approaches have emerged over the past two decades: Saudization and feminization. Saudization refers to the process of increasing Saudi national employment and reducing reliance on expatriate labor, while feminization reflects the growing participation of women in the workforce. These two dynamics provide a lens through which we can analyze the impact of various policies and reforms discussed earlier, helping us to understand the forces shaping the labor market.

Both Saudization and feminization have both contributed to female employment growth, but their relative influence shifted over time. When analyzing the total growth in female employment between 2016 and 2022 (as shown in Figure 33), it becomes clear that both processes have played crucial roles. Initially, from 2016 to 2018, Saudization was the primary driver of female employment growth. This is expected given the introduction of the second wave of Nitaqat and the implementation of expatriate levies, which placed pressure on firms to hire more Saudi workers. During this period, Saudization accounted for a larger share of female employment growth, outpacing feminization. However, the overall gains in female employment were still relatively modest compared to later years.

From 2018 onwards, feminization became increasingly significant, as pro-women legal reforms and initiatives lowered barriers to female participation. While fewer changes were made to Saudization policies, a series of female-specific reforms were introduced, including changes that removed barriers to women's workforce participation and provided supportive programs like transportation and childcare subsidies. These changes facilitated the entry of more women into the labor force, particularly those with less-than-university levels of education. As a result, feminization began to play a larger role in shaping the labor market, while the influence of Saudization gradually diminished.

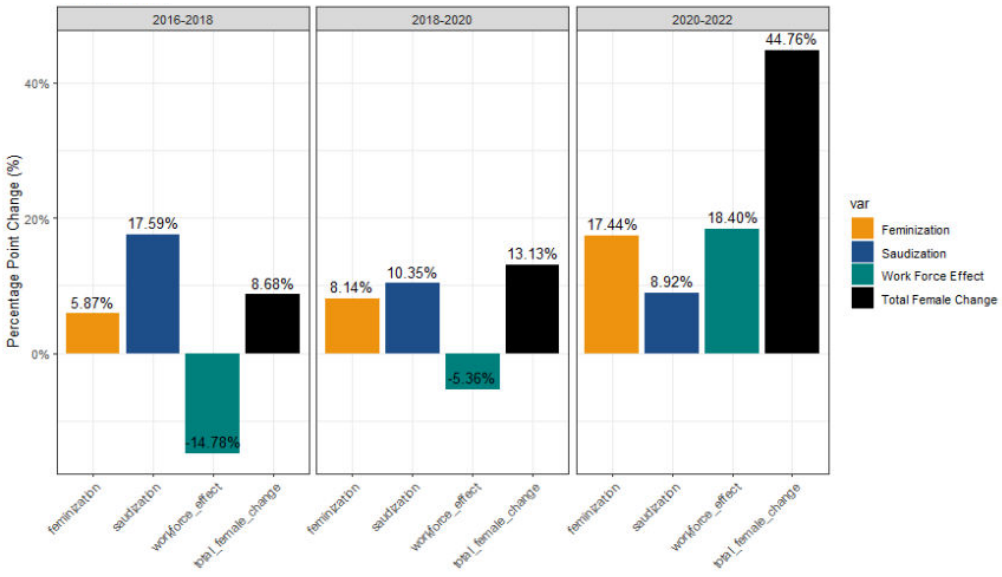
By 2021-2022, feminization had overtaken Saudization as the dominant force driving female employment growth. This period saw significant economic changes, including a return to high oil prices, which led to increased expat employment and job growth for Saudi men. However, it was the continued impact of pro-women reforms, such as wage subsidies for new labor market entrants and the increase in the *de facto* Saudi minimum wage, that had the greatest influence on female employment. Many women, particularly those with lower skills, are concentrated around the *de facto* Saudi minimum wage level, and the increase from SAR 3000 to SAR 4000 made entering the workforce more attractive. In addition, wage subsidies provided further support for female entrants, helping to stabilize and grow female employment during this time. By 2021-2022, feminization was responsible for twice as much of the female employment growth as Saudization (Figure 34).

Figure 33: Decomposition of Female Employment Change into Feminization, Saudization, and Work Force effects (2016-2022):



Source: MHRSD GOSI

Figure 34: Decomposition of Female Employment Change into Feminization, Saudization, and Work Force effects (2016-2022):



Source: MHRSD GOSI

Section III: Policy Implications

Having identified the key drivers contributing to the gains in female employment during the weak economic period from 2016 to 2022, the question remains: are these drivers sustainable in the long term?

Pro-Women Legal Reform and Shift in Social Norms

Legal and social reforms have driven female employment gains, but sustaining these gains requires further adjustments particularly for non-university educated women. The removal of legal barriers in Saudi Arabia, such as lifting the ban on women driving and expanding employment protections, has significantly increased female employment at minimal economic cost. These reforms have also contributed to evolving cultural norms. Despite this progress, the majority of non-university educated women remain outside the labor market, indicating that considerable barriers to entry still exist. For long-term sustainability, workplaces must fully adapt to gender-neutral environments, and efforts to address persistent social and financial barriers must continue. While the removal of legal barriers will likely have a lasting positive effect, targeted support for this group is essential to ensure the broader gains are sustained.

Gender-Biased Policies: *De Facto* Saudi Minimum Wage, Wage Subsidy, Transportation Subsidy

Policies like the *de facto* minimum wage increase and employment subsidies boosted female employment but raise questions about fiscal and long-term sustainability. While higher wages can incentivize more women, particularly non-university educated ones, to enter the workforce, this may not be sustainable without corresponding gains in productivity. Raising the *de facto* Saudi minimum wage without improved output increases labor costs, making Saudi women less competitive compared to expat workers, especially since many women are concentrated around the minimum. This risks turning employment gains into mere compliance with Nitaqat quotas rather than genuine labor market demand for Saudi women. In a volatile oil economy, periods of lower oil prices may lead to firms shedding Saudi workers when quotas are no longer binding. Additionally, a higher *de facto* Saudi minimum wage restricts wage flexibility during economic downturns, making layoffs more likely. Globally, *de facto* minimum wages are difficult to lower once raised, which complicates efforts to ensure these employment gains are sustainable in the long term.

Subsidy programs can provide short term support but must be evaluated for their long-term cost-effectiveness and sustainability. Temporary subsidies, such as wage and transportation subsidies helped women enter the labor force, but the critical question is whether they serve as a transitional tool or must remain permanent to sustain participation. If subsidies are withdrawn prematurely, women risk losing jobs; if maintained indefinitely, they create significant fiscal burdens. Policymakers must assess how long subsidies need to operate to deliver lasting effects, and whether they help women build sustainable careers or merely incentivize firms to meet Saudization quotas.

The design and monitoring of subsidies will determine their future impact. The wage subsidy for new female entrants has clearly raised participation, but outcomes will depend on employer behavior after subsidies expire. If firms retain women once they gain experience, the program works as a temporary "learning cost." But if hiring is quota-driven, employment may collapse without subsidies, potentially requiring costly permanent support. Similarly, the Wusool transportation subsidy—used by over 100,000 women—has improved access, but its true impact remains unclear without evaluation of how consistently beneficiaries rely on it. If critical, its removal could trigger job losses, raising questions about long-term financial viability. Systematic monitoring and cost-benefit assessments are therefore essential before committing to permanent support.

Nitaqat Compliance

Nitaqat has delivered short-term female employment gains but failed to sustain long-run momentum. The 2011 introduction of Nitaqat led to the first significant rise in Saudi women's employment but also reduced the overall size of the private sector (Cortes, 2017). Since then, revisions to the program have struggled to drive sustained employment gains, and the increasing complexity of quota calculations has distorted firm entry into the Saudi market. Short-term compliance has occasionally boosted employment, as seen in 2017, but these effects quickly faded. During economic downturns, firms often shed Saudi workers once quotas were no longer binding, a trend observed in "green band" firms under earlier versions of the program (Cortes, 2017). Taken together, this suggests that further adjustments to Nitaqat alone are unlikely to secure lasting employment growth, particularly in periods of low oil prices and weak economic activity.

Broader trends and implications

Lagging University-Educated Female Outcomes

Lagging outcomes for university-educated women highlight a mismatch between education and labor market demand. Despite increasing levels of education, better employment outcomes have not automatically followed for university-educated women in Saudi Arabia. Many graduates enter fields that are saturated or misaligned with labor market needs, which limits their opportunities. Policies that only expand female university enrollment will not solve this gap. Instead, future strategies should prioritize diversifying skills, promoting entry into non-traditional fields, and strengthening vocational and technical training aligned with industry demand.

Fostering Sustainable Employment Opportunities for Non-university Educated Women in the Labor Market

Sustaining employment gains for non-university educated women is essential to the broader success of women in the labor market. Much of the recent increase in female employment has come from women with high school or less education, many of whom are new entrants clustered near the *de facto* minimum wage. Their continued employment depends on building skills that allow them to remain competitive at current wage levels. While participation has already exceeded the Vision 2030 target, most low-educated women remain outside the labor force, particularly in rural areas and smaller cities where social norms may

be slower to change. Without efforts to address these social and financial obstacles, the risk remains that initial gains will plateau. Ensuring that these women transition from temporary entrants to long-term contributors will be key to sustaining labor market progress.

National and Industry Employment

To safeguard employment from oil price fluctuations, diversification away from oil dependency is necessary for long-term sustainability. Job creation in Saudi Arabia remains closely tied to government spending, which fluctuates with oil prices. High oil revenues are associated with increase spending and rising Saudi employment, while oil price downturns constrain fiscal space and reduce employment opportunities for both Saudis and expats. Since many women work in sectors reliant on public spending, such as education, health, and retail, their employment is particularly vulnerable to this cycle. To secure women's employment gains, the government must reduce reliance on oil-driven spending and expand opportunities in the non-oil private sector. A stronger non-oil export base would buffer women's employment against oil price volatility and support a more resilient, sustainable labor market.

Closing remarks

The dynamics of female employment growth in Saudi Arabia challenge traditional assumptions associated with oil-rich economies. Fluctuations in oil prices have historically had a significant impact on government revenues and employment patterns in the country. However, following the 2014 oil price decline and the 2020 global pandemic, differential growth patterns emerged where female employment in Saudi Arabia experienced significant gains, while male employment stagnated, and expat employment declined. This was not merely a demographic shift. Additionally, if females had mirrored their old sectoral composition, they would have seen falling employment, not these historic gains.

These differential growth patterns raise important questions about the factors driving female employment gains. Saudization efforts, aimed at increasing Saudi employment and reducing reliance on expat workers, have not been the main driving force behind these gains. Instead, pro-women reforms and gender-biased policies, such as the removal of legal barriers, wage subsidies, and the *de facto* Saudi minimum wage hike, have emerged as the primary drivers.

While this report provides insights into the factors driving female employment gains in Saudi Arabia, it also raises important questions for further exploration: how can policymakers ensure the long-term sustainability of these gains? What are the potential fiscal implications of wage subsidies and transportation subsidies for female workers, and how can these programs be sustained in the long term? What strategies can be implemented to improve labor market outcomes for university-educated women? What are the underlying factors that prevent the majority of non-university educated women from participating in the labor market, despite making significant gains? How can diversification efforts be strengthened to reduce volatility of employment patterns on government spending and enhance productivity? Finally, it is important to note that the drivers of female employment continue to evolve; the drivers of female gains now may not be the same in the future, necessitating ongoing analysis and adaptation of policies.

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APPENDIX 1: Technical Tables

Table 1: Female Employment change shift share composition: Employment, Participation and Demographic Effects

$$female\ employment = Female\ employment\ rate\ x\ total\ females\ in\ the\ labor\ force$$

$$female\ employment = \frac{female\ employed}{female\ labor\ force}\ x\ female\ labor\ force$$

$$female\ employment = \frac{female\ employed}{female\ labor\ force}\ x\ \frac{female\ labor\ force}{working\ age\ population}\ x\ working\ age\ population$$

$$\log(E) = [\log(E) - \log(LF)] += [\log(LF) - \log(WP)] + \log(WP)$$

$$\log(E_t) - (E_{t-1}) = [\Delta\log(E) - \Delta\log(LF)] += [\Delta\log(LF) - \Delta\log(WP)] + \Delta\log(WP)$$

$$\%\Delta E = [\%\Delta E - \%\Delta LF] + [\%\Delta LF - \%\Delta WP] + [\%\Delta WP]$$

$$\boldsymbol{\%\Delta E = [Employment\ Effect] + [Participation\ Effect] + [Demographic\ Effect]}$$

Table 2: Unadjusted and Adjusted Gender Wage Gap

Year	Median Wage Males	Median Wage Females	Unadjusted Gender Wage Gap	Adjusted Gender Wage gap	Adjusted Wage gap (New Entrants)
2016	3400	3000	-12%	-10%	-8%
2017	3500	3000	-14%	-9%	-9%
2018	3750	3000	-20%	-11%	-11%
2019	4000	3000	-25%	-12%	-9%
2020	4000	3000	-25%	-12%	-5%
2021	4750	4000	-16%	-12%	-6%
2022	5175	4000	-23%	-14%	-8%

Table 3: Decomposition of Female Employment Change into Feminization, Saudization, and Work Force effects

$$female\ employment = \frac{female\ employed}{total\ Saudi\ \ employed}\ x\ \frac{total\ Saudi\ \ employed}{total\ employed}\ x\ total\ employed$$

$$\log(E) = [\log(E) - \log(S)] + [\log(S) - \log(T)] + \log(T)$$

$$\log(E_t) - (E_{t-1}) = [\Delta\log(E) - \Delta\log(S)] + [\Delta\log(S) - \Delta\log(T)] + \Delta\log(T)$$

$$\%\Delta E = [\%\Delta E - \%\Delta S] + [\%\Delta S - \%\Delta T] + [\%\Delta T]$$

= Change in female ratio + change in Saudi ratio + change in total employment

$$\boldsymbol{\%\Delta E = [Feminization\ \ Effect] + [Saudization\ Effect] + [Employment\ Effect]}$$

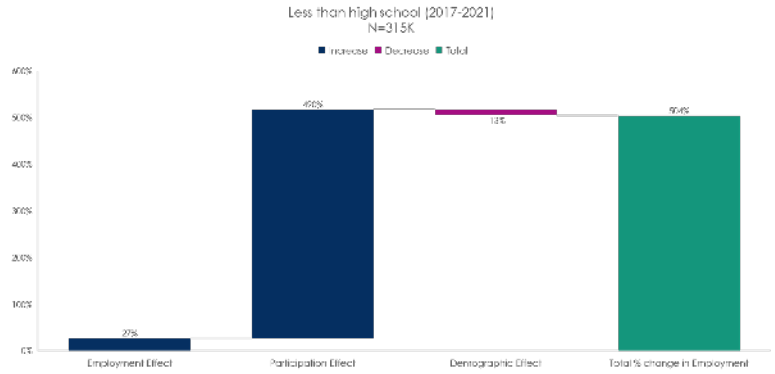
Table 4: Gender Wage Gap: Log Median Wage & Female Dummy

	(1) Full Sample	(2) Full Sample	(3) New Entrants	(4) New Entrants
VARIABLES	Log Median Wage	Log Median Wage	Log Median Wage	Log Median Wage
Female Dummy	-0.115***	-0.0987***	-0.0791***	-0.0825***
	(0.00231)	(0.00603)	(0.00235)	(0.00654)
Sector Fixed Effects	YES	YES	YES	YES
Occupation Fixed Effects	YES	YES	YES	YES
City Fixed Effects	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES
Female Dummy-Year Interaction (base year=2016)	NO	YES	NO	YES
Female x 2017		0.00299		-0.00599
		(0.00843)		(0.00890)
Female x 2018		-0.0129		-0.0233**
		(0.00838)		(0.00941)
Female x 2019		-0.0225***		-0.0107
		(0.00846)		(0.00917)
Female x 2020		-0.0215**		0.0321***
		(0.00863)		(0.00878)
Female x 2021		-0.0179**		0.0249***
		(0.00852)		(0.00852)
Female x 2022		-0.0407***		0.00147
		(0.00836)		(0.00855)
Constant	8.334***	8.327***	8.406***	8.408***
	(0.0130)	(0.0135)	(0.0110)	(0.0116)
Observations	57,430	57,430	44,191	44,191
R-squared	0.405	0.406	0.315	0.316

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parenthesis. Significance levels: * p < 0.1; ** p < 0.05; *** p < 0.01.

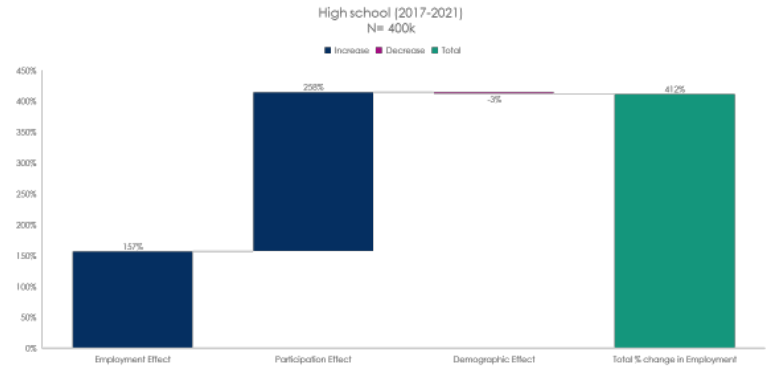
Appendix 2: Decomposition of Saudi Women's Employment Gains by Education Level

Appendix Figure 1: Shift Share Decomposition of Less than High School Educated Saudi Females (2017-2021)



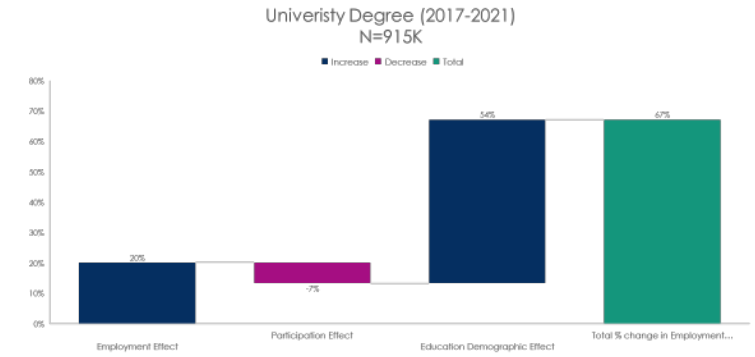
Source: Author Calculations using GASTAT LFS

Appendix Figure 2: Shift Share Decomposition of High School Educated Saudi Females (2017-2021)



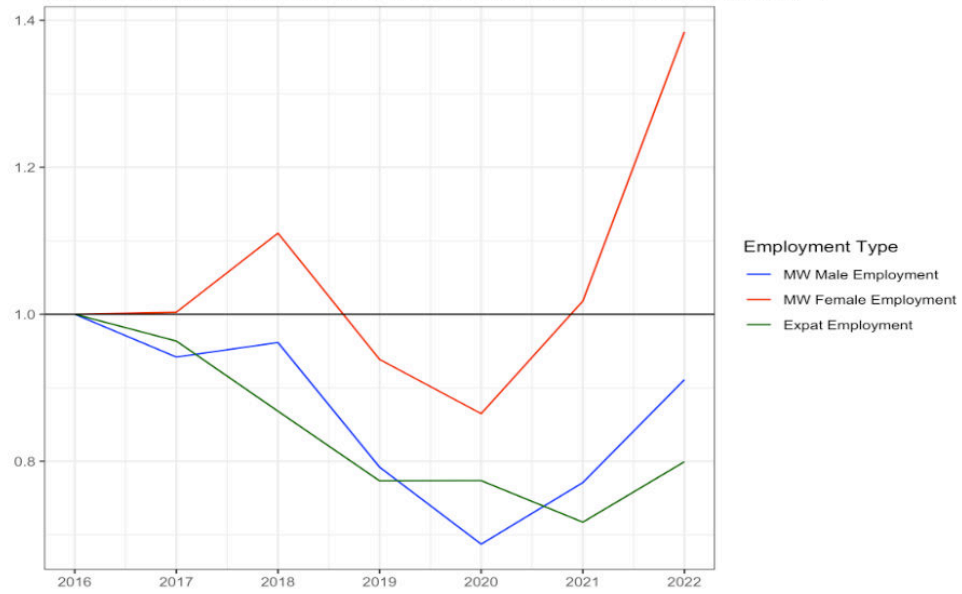
Source: Author Calculations using GASTAT LFS

Appendix Figure 3: Shift Share Decomposition of University Educated Saudi Females (2017-2021)



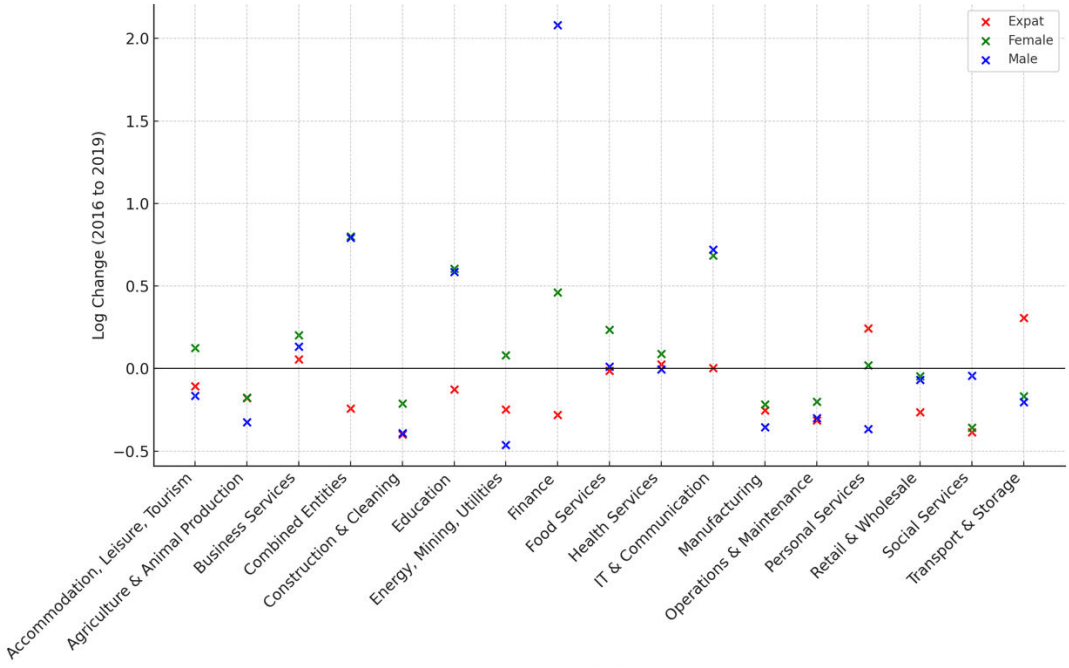
Source: Author Calculations using GASTAT LFS

Appendix Figure 4: Change in Employment for Saudi Males and Females at the *de facto* Minimum Wage (MW) and Expats, Index(2016)=1



Source: MHRSD GOSI

Appendix Figure 5: Log Change in Employment by Sector (2016-2018) – Saudi Males and Females at the *de facto* Minimum Wage and Expats



Source: MHRSD GOSI